

ITEMS OF INTEREST.

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ORIGINAL COMMUNICATIONS.

PROSTHETICS.

In the Alabama Association.

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

Dr. J. Y. Crawford said there frequently seems to be a disposition to relegate mechanical dentistry to the background as if beneath our attention. But the best dentist is the all-round dentist; the one who is able and ready to do whatever is best for each patient. There is often great responsibility attached to the proper construction of an artificial denture. Of the two, a plate for the lower jaw ought to be the most comfortable. Yet how often is this the case? Have a good metal lining, or swaged aluminum with rubber attachments. Use a die and counter die of Babbitt's metal, in a sand mold, from a plaster impression, and you can swage even an aluminum plate that will fit like a wafer. Examine it in the mouth. Scallop it out when it wears, till, when the mouth is opened as in taking food, it will not rise up. Wax on the teeth and put it in the mouth as a base plate, and get the bite and occlusion. Adjust the teeth perfectly, flask it and vulcanize, putting in just enough rubber to fill the mold. The smooth aluminum will enable you to open and impact it, and get in just the right quantity of rubber not to drive in the plaster or disarrange the teeth. Cover all the upper aluminum surface with rubber, but let the aluminum rest on the tissues. This will give the greatest satisfaction, especially with patients who have tried to wear lower plates of rubber, celluloid, etc. For comfort I would use it in preference to continuous gum. For the upper jaw, make a good gold plate with rubber attachments.

For the benefit of the younger men, Dr. T. M. Allen gave in detail the method of swaging a gold plate, such as were made by the fathers, before rubber was heard of, saying that if we would more frequently advise gold plates we would educate the people up to the standard.

Dr. W. G. Browne described his greatly simplified method of making gold plates with rubber attachments, without dies. He uses No. 30 gage pure soft gold, burnishing it directly on the plaster model, and stiffening by soldering a platinum wire all around the pieces, and flowing solder over to make a smooth surface. In a lower parital plate, when the eight anterior teeth were in position in the mouth, he makes the portion of the plate extending across the anterior teeth of a double plate of gold, with bits of platinum between the two gold plates, soldering the two plates only at the points where he placed the aluminum pieces. The rubber covering the lingual surface of the piece entering between the two thicknesses of gold made a very strong piece without swaging or using dies in its construction.

Dr. Crawford said that the description of Dr. Browne's method was interesting, but he must protest against the idea of swaging gold over a plaster model with the fingers. If you want to make a gold plate, charge \$100 or \$150 for it and make it in conservative style, giving your time and labor to its honest construction. Swaging between metal dies is the only way to secure perfect accuracy.

Dr. Browne's method he considered only applicable to a collar or band for a tooth.

Dr. C. V. Rosser spoke of the great difficulty of swaging an upper plate when the arch is very high. He would swage it in two parts, the roof of the mouth, and the alveolar ridge, soldering together afterwards.

Dr. Chisholm said that to secure perfect accuracy it would be found necessary to have several sets of dies. In case of undercuts cut out a V and solder.

Dr. R. R. Freeman advocated the reliable old-fashioned die and counter die of zinc and lead. He said it is a well known fact that the expansion of plaster and the contraction of zinc mutually counteract each other, making an equipoise and giving a most accurate fit. Do not follow blindly after any one, but "think, and give a reason for the *think* that is within you!" For lower plates afford a bearing for the lips to press the plate down. Ridge or no ridge makes no difference in the lower jaw, unless it is of the hour-glass shape from great absorption at the roots of the teeth, leaving it full at the top. In such a case take the impression in modeling compound, and let it drag till it comes out. From an impression thus removed you can get a model on which to make a plate that will fit comfortably.

To reach an estimate of the comparative merits of the different die metals, Dr. Crawford proposed that at the next meeting of the Association Dr. Freeman and himself respectfully should make a metal plate. He would use Babbitt's metal, Dr. Freeman using zinc and lead. They would each take an impression of the same mouth, and make two plates, each one in his own way. The plates to be tested on the cast and in the mouth for accuracy of fit.

Dr. Freeman expressed his willingness to accept this challenge, saying he felt assured in advance that while Dr. Crawford's might fit the cast, his would fit the mouth more perfectly.

Dr. Chisholm would use type metal as giving the most clean-cut die, with lead for the counter die.

Dr. R. C. Young said that to get an accurate adjustment of a Logan crown he found it useful to take an impression of the exposed end of the root after it has been proximately trimmed, and make a cast. Smoke the cast, and on applying the crown you see exactly where it requires grinding.

Dr. Freeman paints the end of the root red. The pigment adhering to the crown shows where to touch it up with much less trouble than making a cast.

Dr. C. L. Boyd: When a patient wearing an upper plate has the anterior lower teeth in place, but will not wear a lower plate, the lower teeth often cut out the rubber, exposing the pins of the upper teeth. To prevent this fit small triangular pieces of gold or aluminum against the lingual surfaces of the upper front teeth. The lower teeth striking against the metal prevents exposure of the pins. Dr. Boyd uses a little rouge and glycerin mixed on his cement slab in adjusting artificial crowns.

Dr. Chisholm asked for ideas as to the best method of supplying an upper lateral incisor, all of the other teeth being in place and in good order.

Dr. Crawford suggested several methods—a cantilever bridge supported by cutting a hole in the cuspid, but no band around the front of the latter, or by a hood crown on the cuspid of gold coin swaged on a metal die, or of 22k. clasp metal, or the cuspid could be cut off, putting on a Richmond crown with an extension bridge lateral.

The officers of the Alabama Association are: Dr. T. M. Allen, Enfaula, President; Dr. R. A. Rush, Selma, First Vice-President; Dr. W. E. Proctor, Sheffield, Second Vice-President; Dr. S. W. Foster, Decatur, Secretary; Dr. G. M. Rousseau, Montgomery, Treasurer.

PROSTHETIC DENTISTRY.

In the Georgia Dental Association. Reported by Mrs. J. M. Walker.

Dr. J. C. Brewer, of Blackshear, Georgia, presented an interesting paper on Operative Dentistry. He said:

We all know the importance of properly caring for children's teeth, and the necessity for enlightening parents pertaining to the welfare of the teeth, especially in the distribution of properly prepared literature, giving the public a chance to learn the importance of having a healthy mouth, through the more general distribution of suitable dental literature. It is of the greatest importance to gain the confidence of young patients, and of never misleading them by false promises of painless operations. Cavities in deciduous teeth should be filled with gutta-percha. In the grinding surfaces of molars and bicuspid, the gutta-percha fillings may be capped with an amalgam having a large percentage of tin. For devitalizing the nerve of a deciduous tooth, when this cannot be avoided, we use equal parts of oil of cloves and carbolic acid. We are reminded of the death of a child of seven years of age occasioned by the use of "toothache drops" purchased at a country store. This penetrated through the foramen, necrosis ensued, and in spite of all remedial aid death was the result. The bottom of the small bottle was covered for an eighth of an inch with arsenic. The importance of proper use of the molar teeth in mastication, and the use of food requiring thorough mastication should be urged on all. For permanent fillings we have had very satisfactory results from the use of Daniel's mastic as a lining for large cavities, which forms an impervious coating, closing the mouth of the dental tubuli, and acting as a non-conductor to some extent. For root fillings we use cotton saturated with creasote and dipped in oxid of zinc. We do not consider pulp capping good practice, nor "a safe road to travel," though we have been quite successful in a small per cent of cases. When there is a thin layer of dentine over the pulp we would fill half or two-thirds full with oxyphosphate. In all operations fair dealing should form the basis of action, keeping in view the elevation of the profession through the relief of suffering humanity.

Dr. W. G. Browne described his method of making plates of pure soft gold directly on the plaster model without the use of metal dies, as given in the report of the Alabama Society published in the *ITEMS*.

A patient wearing one of the plates so constructed, was pre-

sent and ready to have it examined by any one who desired to see for themselves the superiority of this method.

Dr. Thos. P. Hinman described the process of stamping aluminum crown with the Morrison outfit. After the crowns are fitted and polished he thickens up the cusps with amalgam. These serviceable crowns can be stamped up in a few moments, and for twenty cents you can buy enough aluminum plate to make a hundred crowns. Take the measure of the tooth with a tightly twisted wire, and an accurate fit is easily secured. The great advantage of aluminum crowns is in cheapness of material, ease, and rapidity of manufacture, and the fact that they never tarnish.

Dr. Rosser prefers making a crown with a band, into which he can look and assure himself of its accurate fit.

Dr. Johnson thinks the crowns stamped with the Morrison mandrels only suited to very symmetrical teeth with good straight walls, but that a band can be adjusted more accurately before the cap is added than after. The mandrels, though of different sizes, are all of one shape, while teeth are infinite in variety. In shaping a seamless crown with contouring pliers the shape of the cusps is liable to be injured, and in filling in the cusps with solder there is danger of the solder flowing up the sides of the crown and spoiling the fit. If the cusps are filled in solidly, and the band adjusted accurately before the two are joined, there is more certainty of success. In filling in a seamless crown with solder you can't make the surface of the solder in the crown conform to the surface of the end of the root.

Dr. Thompson puts wax in the crown and then places it on the root, which is forced into the wax, showing exactly where to grind the root to fit the surface of the solder.

Dr. Catching paints the surface with Spanish whiting and water, which prevents the solder from flowing where it is not wanted.

Dr. W. H. Morgan spoke of the proper preparation of borax for soldering. It should be heated to drive off the water of crystallization which causes the solder to "crawl." Borax absorbs moisture from the atmosphere, and when heated it forms steam and puffs up the borax, lifting off the solder. Dr. Morgan thinks that many crowns fail because they are set too short, a portion of the neck of the tooth being left uncovered. It is better to make the crown too long and separate the gum from the tooth than to make it too short. When teeth that have lost their natural support and become loose in the socket are properly crowned, covering all por-

tions from which the peridental membrane has been removed, affording protection against the ingress of foreign substances, this source of constant irritation being removed, the teeth will assume healthy conditions and often become firm again without any other treatment than the crowning. "I never hesitate now," he said, "to put a crown in a root, however loose it may be in the socket."

Dr. Crenshaw had used the "J. J. R. Patrick outfit" a great deal, but has now discarded it in favor of the ready-made seamless crowns on the market. They are so easily adapted and demand so much less time. Get them too large if anything, and make the necessary change with a reducing die. Never attempt to stretch a crown that is too small. They are especially available as dummies for masticating wedges. The crowns should be of 23 or 24 karat gold, filled in with 22 karat solder, and set in position with 20 or even 18 karat solder.

Dr. Johnson had recently seen the failure of what was otherwise a beautiful piece of work, because the crown on a wisdom tooth had been made too short. The cement had dissolved out almost entirely. The centrals had porcelain crowns and the bridge ran back to the wisdom teeth on each side. The other crown had worn through from not having sufficient solder in the cusps.

Dr. Browne: In making a Richmond crown, when the porcelain is put in position, there is often a space between it and the band. If this space is packed with pellets of gold, solder will flow over it, and no place be left for deposits to lodge.

Dr. H. H. Johnson always backs a porcelain tooth with pure gold, bringing it down to a very thin edge.

For bicuspids Dr. Catching uses a Logan crown with a gold band.

Dr. Thompson uses a Logan crown with a plate ferrule, covering the latter with body, and baking in a Downie furnace. You can get all shades of body and want merely a film to hide the gold band. It makes a beautiful tooth, looking as if growing from under the gum.

Dr. D. D. Atkinson thought that sufficient stress had not been laid on the importance of having heavy cusps. The weak point in a gold crown is the liability to wear through. He does not see how enough solder can be flowed into the cusps of a seamless crown to enable it to resist the force of mastication. The cusps should be made thick enough to fill all the space between the occluding tooth and the stump.

Dr. Browne: If you use an asbestos film for investment, you can fill a seamless crown entirely full of solder if you want to.

With this material for investment, you don't have to wait, as you do for plaster, to dry out. As the wax melts, the fiber becomes hard and holds the crown rigidly in position, and you can apply solder at once. It hugs closely and stays where you put it.

Dr. Morgan has been using asbestos for forty years, but always mixed with plaster and waited for it to dry out.

Dr. Browne: I use it *just so*, and do not have to wait any.

SOME OF MY FAILINGS AND THE CAUSES.

Dr. B. F. Sims.

In Georgia Association. A Synopsis by Mrs. J. M. Walker.

To advance we must recognize our mistakes; to be successful we must profit by our failures. For the benefit of others we will describe some failures in gold fillings, which, after two years service, were leaking, having given way at the palatal surface. Examination convinced us that in preparing the cavity we had left standing too much of the thin enamel wall, which had consequently chipped off. We also attribute failure in our earlier work to operating from the labial surface. In a similar case now we would carry the rubber-dam well down on the tooth with a separator, cut away all thin walls, depending on under cut for retention of filling. We would polish all the edges of the cavity with disks and strips, and introduce non-cohesive gold from the palatal surface in folds, packing it against the cervical portion of the tooth. After filling the cavity full of these folds we would force a plugger in between the folds as deep as possible, and work in cohesive foil, depending on wedging as well as cohesion. In this way we would contour the filling and expect it to save the tooth. In another case, while decay had progressed all around a thoroughly condensed filling, leaving the teeth almost ready to drop out, we naturally concluded that the tooth structure was not of a character proper to have been filled with gold at that time. The gums also were not in healthy condition, nor the mucus acid. In a similar case to-day we would adjust the rubber-dam, polish the surface and fill with the cement, giving instructions for the proper care of the mouth, and letting the cement filling remain till the teeth are less sensitive and the structure improved. In the course of a few years they will probably be in proper condition to receive gold fillings. In conclusion, we advise the young men of the profession to study carefully their failures, and learn the lesson taught by each. Successes will take care of themselves.

JAWS OF INEBRIATES.

The question naturally arises, "Shall we not find as large a percentage defective among inebriates as other neurotics?" I have examined the mouths of all of these classes. I give you the results of my investigations.

TABLE OF DEFORMITIES OF THE JAWS OF THE DEGENERATES.

	No.	Normal.	Large Jaw.	High Vault.	V-Shaped Arch.	Partial V-Shaped Arch.	Semi-V-Shaped Arch.	Saddle Arch.	Partial Saddle Arch.	Semi Saddle Arch.
Idiots	1977	55.3	7.6	16.	6.5	11.9	.....	10.4	.....	.....
Deaf and Dumb	1935	45.3	15.7	21.7	8.7	9.9	.....	10.4	.....	.....
Blind	207	50.7	7.7	18.3	3.3	4.3	.....	5.3	.....	.....
Insane	700	62.	18.	44.	26.	47.	.....	12.	.....	.....
Criminal	477	36.06	15.72	14.67	2.7	16.56	3.9	12.36	19.28	5.03
Inebriates*	514	25.04	6.4	59.5	1.5	24.4	0.3	9.3	18.2	7.7
Normal	1000	78.	1.9	5.6	1.1	6.1	.....	3.3	.....	.....

It will be observed that there is a larger percentage of deformities among the inebriates than among any other defective class.

These deformities, however, are not so pronounced as those found among the idiots and criminals. J. of A. M. Asso.

SEPARATING TEETH.

In the Georgia Dental Society. Reported by Mrs. J. M. Walker.

Dr. Holland considers it a crime to put rubber between the teeth, robbing the patient of rest and sleep. He prefers to take a little more time and separate with cotton, which causes no suffering. He places a ligature between the teeth, and then packs in cotton, tying it down with the ligature thread, cutting off all surplus. This forces the cotton between the teeth where they knuckle, and separation is effected in twenty-four hours with little or no soreness. The rubber, because of the constantly increasing pressure, lasting for hours, causes great soreness of the teeth. Orange wood may be used to advantage in many cases. For immediate operations, Dr. Holland advocates Perry's Separators, which cause far less soreness than rubber.

Dr. W. G. Browne thinks, from frequent observations, that cotton used in this way allays sensitiveness of dentine, though he

*The examination of inebriates was made in the Keeley Institute, Dwight, Ill.; the Inebriates' Home, Ft. Hamilton, N. Y.; Washington Home, Chicago; Washingtonian Home, Boston; and Dr. Crothers's Institute, Hartford, Conn.

cannot assign any cause for such effect, but patients themselves notice it.

Dr. Thompson thinks rubber much more cleanly than cotton, the latter soon becoming offensive. If it comes out, as it will do, it cannot be replaced by the patient as rubber can, and it is too slow in accomplishing the object.

Dr. Barfield uses cotton, and instructs the patient, after twenty-four hours, to remove it and insert a piece of cardboard (postal card is good), clipping off the projecting ends. This holds the teeth apart effectually. The elasticity of rubber causes it to exert a constant pressure, increased by the least pressure on the teeth. Cotton not being elastic does not have that effect.

Dr. Carpenter uses rubber but not a thick wedge. He uses very thin rubber-dam, perhaps doubling it once but not more. If plenty of time is given it will not cause any very serious annoyance.

Dr. H. H. Johnson considers the use of rubber a relic of barbarism. Cotton ensures the solidity of the tooth—the reverse being true of rubber.

Dr. Rosser having been the victim of rubber separations himself, and having had cotton used between other teeth, in his own mouth, testifies that rubber inflicts the severest torture he ever experienced, while the separation with cotton, though slow was efficient and painless. Cotton holds the teeth perfectly solid, and they do not go together during the operation of filling. He does not consider the use of separators feasible in patients over middle age, and not in all cases even in the young. He might use it in an emergency but not in general practice.

Dr. Jewett: The soreness occasioned by rubber is due to its springiness, which is excited by occlusion. Cotton presses gradually through the absorption of water—hydraulic pressure—which is firm and steady. In regulating, a screw is much more comfortable than rubber ligatures. He prefers the Perry separators to either cotton or rubber. If the blows of the mallet drive the teeth farther apart, another turn of the wrench holds them firm and solid.

The subject of retaining pits and shaping cavities was discussed in the late Georgia Convention. Dr. Catching asked for a general reply to the direct question: "How many drill pits for the retention of gold filling?" In reply, about half of all present raised the hand in the affirmative.

Dr. Catching does not believe in drilling holes and filling them up to build filling on those spots. He obtains anchorage from properly shaping the cavity.

Dr. Tignor does not drill deep holes running parallel with the pulp, but with a spear-shape drill he cuts across where the dentine and enamel anastomose and nearer his anchorage.

Dr. Hall: Unless you have proper retaining points, your filling will rock around and you can't steady it.

Dr. Catching starts a filling with crystal-mat gold and builds out with Bonwill's electric or the hand mallet. A layer of varnish affords excellent protection for the pulp, acting as a non-conductor, but it must not be brought to the edge of the cavity, or relied on to hold the filling in.

Dr. Johnson: Non-cohesive gold cannot be retained with retaining points, but if your first piece of gold is not anchored you will have a failure.

Dr. Jewell wants one retaining point to hold his first piece of gold, while he gets anchorage in undercuts at the cervical and the cutting edge. By anchoring at the gingival margin you can build out and polish it down afterwards. He makes his one retaining point $1\frac{1}{2}$ the diameter of the bur.

Dr. Frank Holland: If undercuts are deep they weaken the walls of the cavity so that you cannot condense your gold properly, but will fracture the enamel margins. Use cohesive gold thoroughly annealed, and start with a pin point drill for anchorage. You will have strong walls, and have but a little hole in the tooth substance between the pulp and the enamel. Never let two surfaces of enamel come together, but round out your fillings where the teeth come together. Shape your cavity so that you can see everything you put into it, and knuckle your fillings so that enamel surfaces will not come in contact again.

ITEMS FROM G. A. MILLS.

EDITOR ITEMS:—Before it is cool, I'll pen this, taken from the September ITEMS, first out since the Congress. Good.

Now for the joke: "Dr. Tomozola, of Russia, a noted physician, is about to make public what he claims to be a positive cure for leprosy. The chief ingredient in the remedy is a whey obtained from sheep."

N. B.—Is not this rather a sheepish whey to get cured?

A Gentleman just from the Dental Congress.

P. S.—This is yours. In the windy city there were two currents, one visible in results, and another out of sight; and if not neutralized, there's no telling what will happen if it gets loose. There's been one big blow; can we stand another?

Another Gentleman from Congress.

CEMENT FILLING.

Dr. R. B. Tuller, Chicago.

I notice in September ITEMS several items favoring cement fillings for permanent work. American dentists who have not been in Europe have little idea how much cement is used over there. Europeans, as a rule, will not tolerate "jewelry" in their teeth. They would rather return often for renewal of cement than be conspicuous by the glitter of gold in the mouth. Americans are frequently recognized as Americans by the display of gold in front teeth. I think the better class of dentists in this country recognize that it is bad taste to display gold fillings, and avoid it as much as possible; and people of good taste desire to avoid it. But cement is generally considered cheap dentistry and not permanent. It is not easy to command a proper fee for skilful and artistic work, simply because it is only cement. I have a filling of cement in a lower molar which has done service for thirteen years, and is only defective now in being somewhat worn away. But I must confess I cannot make cement fillings do such service. Perhaps I could if I tried, and could get proper pay for it. There are many cases where it would be desirable, in many ways, if only permanent. In many large cavities I use it in preference to pounding in gold from the bottom up, finishing, however, with gold. I do it often to save my patient discomfort and misery, as well as for the reason that I think it means a very perfect filling. But I think most of the cement fillings should have a film of protecting substance between them and the tooth, over the region of pulp chamber. In advocating cement I think this should be kept in mind. Another thing is in regard to its adhesive quality. It does indeed cling closely to the walls of the tooth, but if anyone will let a little harden on the mixing slab, or even on the rough surface of a corundum stone, and then see how easily it is dislodged after moistening, they will see that its sticking qualities depend greatly on our ability to keep moisture from between it and the walls. This would indicate the making of a cavity that has a retaining shape to a variable extent, and would also indicate the use of hot paraffin or something of that nature as a finishing coating to such fillings. I believe cement fillings could be made much more durable and satisfactory if we gave them the same study and thought we do our gold and amalgam, with a view to greater perfection.

In finishing cement with gold I generally take or make a hollow cylinder of gold, pressing together one end, making, in fact, a

cup. This pressed into the cement while yet soft, prevents the moist cement from coming into the center, and the hollow is just what you want for the next piece of gold when the cement is hard enough to add it.

FILLING ROOTS WITH CHLORO-PERCHA.

Dr. R. I. Blakeman, New York.

This solution, depending on the degree of fluidity, is very permeative. Perhaps some of you may have experienced getting it on your fingers; if so, you have doubtless noticed how it penetrates the fissures of the skin, and how difficult it is to remove at the time without the aid of a solvent. If an instrument be dipped into it, especially one that is a little rough, the gutta-percha adheres to it very closely, and remains so after the chloroform has evaporated. It sticks to the smooth surface of glass as well, and also to tooth-structure. It answers nicely to line gold with against which amalgam is to be placed, so that the gold may not be affected by the mercury. When the fluid is very thin, it seems as susceptible to capillary attraction as water. Therefore, as some of the canals we wish to fill are very fine, and we feel that they must be filled, as on this largely depends the future welfare of the tooth, to fill them with this solution seems practical so far as the principles of physics are concerned. For the purpose of describing the process of manipulation, let us consider a molar, the roots of which must be filled from a posterior cavity difficult of access, a somewhat common occurrence. When the roots are dry and ready to fill, it is best to add some fresh chloroform to the solution kept on hand, so that the upper portion is quite thin, while the lower is left very thick. Then with a small broach, with a few fibers of cotton wrapped about the end, the solution can be carried to the canals, and, when the entrance to them is flooded over, it can be pumped in with a small bare broach.

After the canals are full of the thin solution, by dipping deeper into the supply the thicker gutta-percha is obtained, which can be pumped into the canals in like manner, the chloroform being worked out so that it can be evaporated with the chip-blower. If there should be a doubt as to the fluid having gone to the apex of any canal, it can be pushed further by making a piston of warm gutta-percha. But great care should be taken in doing this, and the patient should be instructed to respond to the first sensation,

for sufficient force may be brought to bear unconsciously to push the fluid through the foramen. When the canals are sufficiently large to permit of it, it is best to put in a gutta-percha point after they are full of the solution, but not so tight as to cause pressure at the end of the root. It might be well to emphasize this point, as any one not accustomed to filling roots in this way is liable to force something through the apical foramen.

International.

ITEMS FROM THE GEORGIA DENTAL SOCIETY.

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

To remove a waxed-up bridge from the mouth, without changing the position of the teeth or the articulation, or bending the piece when there are several dummies, Dr. Crenshaw fills a bridge-work impression tray with quick-setting plaster, and invests it over the bridge as it is in position in the mouth, removing the bridge in the plaster. It is then held in perfect position, invested, ready for soldering. Always place a pillow or cushion of wax, first of all, from one cap crown to the other, on the ridge, letting the teeth bear on the wax, and preventing the suspended crown from sinking down and bearing on the ridge.

To articulate a crown, when he has got a perfect fit for the band, Dr. Thompson places it on the root and fills it up high with wax, letting the patient bite down into it. This gives the exact articulation. Trim the wax and make a duplicate in Melotte's metal, using a sand mold; swage up the cusps and trim it to fit accurately. Turn the open end of the band up and the cusps down, and tack it to the top of the crown. With a sharp knife, trim off all the gold except one point to hold it by. Catch it with pliers, holding the hollow end up, and you can put all the solder you choose in the cusps. The solder will always flow to the hottest part, and it won't run up hill.

Dr. S. B. Cook (Chattanooga, Tenn.,) says he lacks success with cast aluminum plates, but that stamped plates are very satisfactory and pleasant to wear. He turns a rim on the edge of the plates, in which he cuts grooves for attaching the teeth with rubber.

Dr. C. V. Rosser uses shellac varnish on live teeth to be crowned to overcome sensitiveness.

Dr. H. H. Johnson uses carbonate of soda, or 20 per cent. cocain, applied to the gum, to relieve pain.

Dr. Hinman uses gutta-percha to set Logan crowns.

ALUMINUM ALLOYS.

N. K. Garhart, Indianapolis.

Of all the glittering absurdities and alluring fakes known to dentistry, the introduction of aluminum alloys maintains supremacy in the art of swindling. My attention has been frequently called to the extensive advertisements of aluminum alloy manufacturers by a number of dentists who were anxious to learn if their statements were valid. As a sample of glaring imposition, a Chicago firm claims that its alloy contains 60 per cent aluminum, a manifest absurdity in an alloy designed for dental use. In spite of the excellent sources of information concerning the chemistry of metals which our dental colleges afford, many dental practitioners insist on believing the wild and erroneous statements of these manufacturers.

The following rule will aid those who are insufficiently informed on the essential properties of a practical alloy for dental use:

All metals which do not readily unite with mercury are detrimental to alloys; if such metals are found or advertised to be constituents of alloys, avoid purchasing.

Amalgamation of aluminum can be effected indirectly by several methods. An amalgam thus formed is extremely unstable. On exposure to air the amalgam suffers change, the aluminum rapidly oxidizes enveloping the surface of the separated mercury in the form of a white oxid. The production of heat is always concomitant with the chemical union of any metal with oxygen. The amalgam when thrown into water decomposes it with the evolution of hydrogen and precipitation of mercury and hydrated oxid of aluminum. This reaction is similar to the action of metallic sodium on water.

The methods for amalgamating aluminum are as follows:

(1) Triturating fragments of the metal with mercury in the presence of solutions of the hydrates of sodium and potassium.

(2) Electrolytically by connecting a strip of aluminum with the negative pole of a battery and immersed in mercury.

(3) By pouring together melted aluminum and mercury previously brought to the boiling point.

The following experiment illustrates the value of aluminum for a dental alloy:

Forty parts silver, fifty tin, and ten aluminum were compounded to form an alloy; during the formation of the alloy a portion of the aluminum separated, the amount of which was not ascertained.

The alloy was reduced to filings, and a portion triturated with mercury in a glass mortar; as amalgamation progressed decomposition set in, the mercury separating in the form of a globule from a large quantity of black powder. The experiment was repeated, using the palm of the hand and forefingers as implements to facilitate the mixing. On completion of the mixing the mass grew suddenly hot, and in less than a second I was forced to drop it. The experiment was repeated a third time with the same results.

The next step was to adduce a theory to explain the above phenomena; also why mercury will not unite directly with aluminum.

Aluminum possesses a marked affinity for oxygen. This affinity is so great that the metal under proper condition is capable of decomposing water in precisely the same manner as the metals lithium, sodium, potassium and calcium. This statement may appear absurd when we observe that aluminum is rather permanent in air and water. However, that fact does not overthrow the theory. Aluminum is protected from the action of air and moisture by a thin oxid of the metal covering its entire surface. The metal and its oxid is soluble in solutions of the alkalies, and hydrochloric and sulfuric acids. This oxid being insoluble in water protects the aluminum from oxidizing in the presence of moisture and air. It also explains why the metal will not unite directly with mercury. This film of oxid protects the metal from direct contact with the mercury. The oxids of sodium, lithium and calcium are very soluble in water, hence the speedy decomposition of these metals in water are easily accounted for. If these metals are covered with a thin film of a hydrocarbon, such as coal oil or vaselin, they are then unaffected by air. Brass ornaments are protected from the corrosive action of air and moisture by coating the burnished metal with transparent varnish.

On triturating fragments of aluminum with mercury, combination of the metals does not occur, but if a solution of an alkali is added amalgamation of the aluminum is effected. The alkali dissolves the film of oxid of aluminum, and the two metals are constantly in contact with each other. By melting the aluminum the oxid rises to the surface, protecting it from further oxidation. On adding the boiling mercury it sinks to the bottom of the vessel underlying the melted metal, owing to its high specific gravity. The metals which are in contact with each other unite to form an amalgam.

The affinity existing between aluminum and mercury is very feeble. The aluminum spontaneously separates from the mercury

in an exceedingly fine state of division. So minute are the particles of the metal that every portion is exposed to the energetic action of oxygen. The influence of oxygen induces the separation of aluminum.

The phenomena attending the "alloy experiment" are rather interesting. The aluminum is oxidized, and the silver, tin, and possibly small quantities of mercury are also converted into oxids. The absorption of oxygen producing oxidation of the aluminum, induces oxidation of the metals, silver and tin, which have a feeble affinity for that element. The latter part of the reaction is partly induced by the elevation of temperature resulting from the combustion of aluminum in oxygen. Finely divided aluminum resembles the metal platinum, which possesses the peculiar property of absorbing oxygen with avidity when existing in a fine state of division, and is incapable of undergoing oxidation owing to the feeble attraction of one element for the other. A stream of hydrogen directed on finely divided platinum (platinum black) will clearly demonstrate that wonderful property. The occluded oxygen energetically attacks the hydrogen which ignites, and the harmless product water is formed. It is possible that many metals, when existing in a fine state of division, may possess the same properties. Is it not possible for aluminum, when existing in a fine state of division, to absorb oxygen in a similar manner, undergoing oxidation, and at the same time oxidizing the metals silver and tin? It appears reasonable that aluminum possesses "platinum black" properties, or the influence of the metal produces a peculiar molecular arrangement inducing oxidation of the other metals.

DENTAL EDUCATIONAL LAWS.

Synopsis of report of Georgia Society, by Mrs. J. M. Walker.

Dr. D. D. Atkinson says that when a person shall have obtained a license from a State Board, he should then be admitted to practice in any State without further examination. This addresses itself directly to those concerned in the advancement of dental education. Unity of action must be possessed by the coöperation of the State Boards with the National Board, and the National Board must adopt such measures as will be practicable and acceptable to all State Boards. A person who is really competent to practice dentistry in one State is equally so in any other State, and there must ultimately be such an inter-State adjustment as

will permit a properly educated dentist to change his residence from one State to another without examination.

Yet dental laws, like all others, are not retroactive, and as, in many States, newly created boards are required to license all who are practicing at the time of the enactment of the law, regardless of fitness or qualifications, it is clear that a State license, in itself, is not evidence that a person is really competent to practice dentistry, and it would not be proper to require other States to accept him on that ground.

A license obtained through this vested right may be a premium on ignorance, and his field of practice should be limited to the borders of his own State, and not permitted to insinuate himself into the confidence of innocent people in a strange land on the strength of his State certificate. It is the province of a State Board to determine whether or not a person is legally qualified to practice in that State, but it can in nowise offer any substitute for the facilities and opportunities of learning furnished by the recognized colléges.

It does seem as though a person who holds the diploma of a recognized college, and who has also passed an examination before a State Board as an additional evidence of qualification, should be permitted to practice wherever he may desire to reside.

Dr. Barfield thinks the possession of a college diploma, backed by a State license, ought to entitle a man to practice anywhere.

Dr. Rosser thinks some way must be found by which men of recognized ability can be allowed to practice anywhere without the necessity of a State Examining Board. Some of the best operators in the world—men with the finest practice and the greatest reputation—are not prepared to go before a State Board, armed with a list of test questions designed for young men fresh from college halls. At the next meeting of the National Board, this matter will be discussed, and some measure adopted for inter-State recognition.

Dr. Jewett says dental colleges and dental boards have accomplished a great work, though they have a task yet before them. They must raise the grade for entrance to the dental colleges, or extend the time, to make room for a preliminary literary course. If the State Boards marked in their examinations for penmanship, spelling and grammar, students would prepare themselves for it. If our young men could be made to understand that when they leave college they have only laid the foundation, they would be more likely to continue to study.

In regard to the function of a Board of Dental Examiners, Dr. Morgan claims that they have no right to go beyond the point of ascertaining whether or not a man is practically qualified to practice the art of dentistry. Dental schools must conform to the requirements of the National Board of Faculties, but anything beyond that is not within the jurisdiction of State Boards. No man who is kept busily occupied with practical details can keep up with all the collateral sciences, or undergo, off-hand, a technical examination. On the board each man works up on a particular line, and is probably the only one on the board who could stand the examination he gives. I hope and believe the day is coming when the diploma from a well-known school will have its proper weight with Examining Boards, and that men will be allowed to practice on the strength of their diplomas. An examination should not be demanded from a man who has complied with all the conditions of a regular school. The National Association of Dental Faculties prescribes the rules, the number of terms, the percentage of attendance on lectures, and the amount of clinical work. If a college has a standing in the National Board of Faculties its graduates should not be subjected to a general examination. What is a State Board examination worth? Very recently three or four of our Vanderbilt freshmen went before a neighboring State Board and passed a final examination, receiving a permanent license to practice dentistry in that State, and yet they had only been in the college six months—a mere preliminary course. In another recent State Board examination the first question was: "Give a description of the skin and its functions?" No physician could do that in less than a volume of a hundred pages. One distinguished educator said that it would require a two hundred page book to exhaust the subject! It was an attempt to make the examination severe; but they went entirely outside of the province of dentistry. In regard to the manipulation of gold many questions were asked that have nothing to do with practical dentistry. Now that we can and do buy our plate and foil from men who make it their sole business to refine and prepare it, a knowledge of their processes is not essential to the practical dentist of to-day, for none make their own foil.

Dr. Jewett claims that if the State Board had the right to grade on scholarship, the student, knowing his literary deficiencies, would bring himself up to the standard, and then the members of a State Board would not have to spend hours over examination papers, trying to make out what was possibly meant by this or

that, trying to decipher hieroglyphics, and to locate an idea in a fog of phrases. That a man has had no education is nothing to his credit.

Dr. Catching says the State Boards are a great benefit to the colleges, as well as a protection to the people. A degree of training is necessary before a young man could enter the other departments of Vanderbilt University, and it should be as great in the dental department. Civilization is spreading; Christianity is progressive. The position of our profession to-day is due to the stand taken by the State Boards, and the standard of the colleges in the work of the National Board of Dental Examiners. We have no fight against any school, but we want to see them all attain a high degree of eminence. If students are not properly qualified it is not the fault of the boards. They only want to protect the people against empiricism.

WHAT HAS DENTISTRY TO DEMONSTRATE AGAINST ORGANIC EVOLUTION?

W. G. A. Bonwill, D.D.S., of Philadelphia,

At the World's Dental Congress.

Mrs. Walker, our reporter, says the paper was an elaborate treatise on the geometrical arrangement of the teeth, their sizes and shapes, showing all to be based on the equilateral triangle.

In opening his argument, Dr. Bonwill made a series of *claims*, as,

1st. That the human jaw and teeth show, beyond doubt, the workings of absolute laws which gave them the highest efficiency, and from which organization there could be no change except retrogressive, not progressive; not to higher form.

2d. The human jaw is based for its organization and workings on the principles of the equilateral triangle, which as well underlie the shape of every tooth and the numbers to occupy that equilateral space.

3d. Given the length of one arm of this triangle, say four inches, and it can be shown from this alone how, whatever or whoever made the first human jaw, with a pair of dividers and a straight-edge, the size, shape, and number of each tooth in both upper and lower jaws and their absolute places therein were made; and further, what should be the exact arch containing the six incisors in both jaws, and the action in mastication and incising of food.

The 13th and last claim, reading:

The dental apparatus affords the best proof of the working of a practical, scientific workman from pre-existing laws, and nothing but intelligence and a personality could have ever conceived and made such organs and organisms, and no further proof is needed of the purely scientific productions given in this discovery.

In proceeding to the description of the working model and the drawings with which his paper was illustrated, Dr. Bonwill expressed his conviction that a careful study of the subject would prove that what he had presented was worthy of some consideration as a truly scientific way of arriving at an *ultimatum* by which evolution shall be decided to be as much of a fallacy as it has been a hypothesis. He also invited those who were interested to come to him privately for a more complete exposition than he could make in the time allotted to him here. Though the paper was a very lengthy one it was attentively listened to by a well-attended section. It was discussed by Drs. George A. Mills, of New York City; Eben M. Flagg, of Asuncion, Paraguay; L. P. Haskell, of Chicago; J. J. R. Patrick, of Belleville, Illinois; C. N. Pierce, of Philadelphia; W. Xavier Sudduth, of Minneapolis; and Z. Schwartz, of Leipsic, Germany.

Dr. J. J. R. Patrick, Belleville, Illinois: I am sorry that I am not capable of discussing this question, for I have not studied mathematics sufficiently. This is equal to a display of pyrotechnics. I am almost appalled. I shall not attempt to answer the essayist in detail; but, fortunately for me, he has laid down, in the commencement of his essay, a series of propositions which I shall take the liberty of analyzing.

Dr. Patrick then proceeded to dissect and analyze the propositions with the most severe criticism, concluding with:

My advice is, let Darwin alone. He is beyond your reach, and ever will be. I do not care what his doctrines may have been, nor do I know a more modest man, a more sincere thinker, a clearer thinker. He has captivated the greatest brains in civilization in every department of natural science, and it becomes us to simply do him honor, and leave his doctrines alone.

To which Dr. Bonwill replied:

I have heard but very few words of what the gentleman has said; but I do not want any better evidence of the animosity and ridicule which he brings than in the countenance which he displayed throughout it all. What have I come here to show you? What has this gentleman said in order to contradict me? So far as my conclusions are concerned, that is another question. What I ask

you to do is to follow me in every line that I have given here, and prove whether I am right or wrong.

Dr. Sudduth said :

Dr. Bonwill has discovered a law that governs the articulation of the human teeth as we find them at the present time, and it is a law that, taken and applied to this articulation that he has developed, gives us the best and most practical articulation that we can make for artificial dentures, so far as my experience goes.

Dr. L. P. Haskell, Chicago: These demonstrations of Dr. Bonwill are very interesting. As far as I understand his principles, it seems to me they are admirable. I have been employing his method in the arrangement of the upper teeth. He commences with the lower ones ; I have wanted for a number of years to see him articulate a set of teeth, starting from the foundation.

Dr. Sudduth said :

The environment of the foetal jaw, previous to any osseous development of the arch, shows the compressing influence of the cheeks and lips, and the impress given by the form of the tongue, the form of the arch being established by these forces in the first month of gestation. The teeth are flattened on the inside of the arch through the resistance offered by the tongue, the outer side being contoured through the tendency of protoplasm to assume a globular form when possible. The crowns of the bicuspid are formed by the roots of the temporary molars which serve as matrices. The cusps of the molars are the result of the compression of the rounded papilla.

THE TEETH AND HAIR.

Dr. S. H. Guilford, Philadelphia.

In Columbian Congress. A Synopsis by Mrs. J. M. Walker.

The origin and growth of the hair and teeth are structures most liable to abnormal conditions and are conjointly affected. Evidence of the intimate relations of these tissues, as found in ovarian cysts was considered, and various illustrations of the homology of the two structures given. The conclusions reached were that the intimacy between the two products is probably due to the contemporaneousness of their inception ; that when co-ordinately affected the manifestations are variable, though this variability cannot be accounted for in the light of present knowledge.

The ovum of the vertebrates always consists of a mass of protoplasmic matter contained in a connective-tissue envelop.

By a process of segmentation the ovum produces many cells that form the blastoderm membrane. This eventually is resolved into three layers, epiblast, mesoblast, and hypoblast. "From the epiblastic or upper layer are formed the epiderm or cuticle of the skin and all its appendages, such as the hair, nails and enamel of the teeth; also the brain and nerves. From the mesoblastic or middle layer are formed the true skin, cartilage, bones, muscles, dentine, cementum of the teeth, etc. From the hyperblastic layer are formed the epithelium of the mucous membrane and the various glands of the alimentary canal." (Cryer.)

We believe all biologists agree that mammalian teeth, if not indeed the teeth of all the vertebrata, are developed in a pouch formed in part and in its earlier stages by a dipping down of the oral epithelium, which in time becomes the enamel. Under this depressed epithelium a papilla arises from the corium beneath which the dentine is formed; the papilla being eventually known as the dental pulp. The cementum is formed from what is known as the dental sacculus, a specialized product of the connective tissue which incloses both the enamel and dentinal organs, completely surrounding them.

Such being the origin of the tooth and its different tissues, are we correct in calling the mammalian tooth a "dermal appendage?" The close relationship existing between the teeth of some vertebrates and their dermal scales is best seen in the shark, dog-fish, and other fishes.

Some of our best-known anatomists and physiologists consider the teeth as "specialized dermal appendages," which is accepted by biologists as reasonably conclusive. Each of the various blastodermic layers gives origin to a variety of tissues. Is it, therefore, not reasonable to suppose that where one tissue of a layer is pathologically affected, others of the same layer may be? and if in a number of instances, is it not evident that all of these tissues have the same origin?

In man, we find many evidences of the same relationship between products of the epiblastic layer. In albinism the chief peculiarities are lack of coloring-matter in the skin and hair, and a pink iris. Both of these tissues are epiblastic products, and each is abnormally affected.

Within the past year the writer had the privilege of examining a family of hairless people from the interior of France, consisting of mother, daughter and son. In each individual there was no hair on the scalp, the fine down or lanugo usually covering the

body was lacking, and the finger-nails were thick, narrow and pointed, resembling the talons of a bird. The teeth, however, were normal in size, form and number. Wilson mentions the case of a woman, aged thirty-three years, whose entire body was covered with thick and long hair, and who had never perspired. The abnormal growth of hair was not congenital, but began at puberty and remained. The same author speaks of the nails frequently showing evidences of abnormality in connection with either absence or superabundance of hair.

Dr. E. P. Bradbury, of Boston, reports the case of a man, aged twenty-four, who was edentulous and claimed never to have erupted any teeth. This peculiarity was accompanied by an entire absence of saliva. His tongue was dry and leathery, and his speech thick. He had never been able to take solid food of any kind, but subsisted on soups and soft food.

Coming now to the correlation of the hair and teeth, let us consider cases in which an abnormality of one tissue is accompanied by abnormality in the other. In some instances deficiency of one product is accompanied by deficiency in the other, whereas in others deficiency of one is associated with redundancy of the other. Of deficiency of both structures, the most notable instance on record, and perhaps the only one of its character, is that of a man whom the writer exhibited before some medical and dental societies in Philadelphia in 1883.

He was forty-eight years of age, and had never had any teeth, either temporary or permanent. His head was nearly bald, being only slightly covered with fine down; and while hair was present in the pubic and auxiliary regions, the surface of his body was entirely lacking in the surface-hairs and lanugo usually present. Owing either to the absence or suppression of the sudoriparous glands, he had never perspired. In addition to these peculiarities, he had no sense of smell and little of taste. He is still living and in good health, and of his six children only two (girls) show any signs of inherited abnormality, and then only in having about half the usual number of teeth.

There are notable instances of deficiency or abnormality of the teeth or jaws associated with excessive development of the hair.

Julia Pastrana, a Spanish ballet-dancer, had hair on her head dark, coarse and strong, while on her cheeks and chin she wore a full beard several inches long. Her dentition was normal, but the alveolar and overlying soft tissues were so hypertrophied only the coronal surfaces of the teeth could be seen.

The body of Krao, an Indian girl, was exhibited in Europe some years ago, whose body was covered with a well-developed growth of hair, her jaws hypertrophied and her teeth normal. Fedor Jeftichejew had an abnormal growth of hair, associated with a deficiency of teeth. In his lower jaw there are three teeth, one cuspid and two incisors. In the upper jaw there are only two cuspids; one tooth, a lower incisor, having been extracted.

Fedor, now twenty-three years of age, has his entire body covered with a fair growth of hair, while on his face, including the nose and forehead, there is a strong growth of soft hair several inches in length. He perspires but little. The "Burmese Hairy Family" are noted in this country and Europe. Three members of this family, the grandfather, the mother, and Moungh Phoset, the son, had their faces and bodies covered with long dark hair of a silky character.

The evidence of the intimate relation of these tissues, is the fact that they are often found together in the ovarian cysts.

"Why should these two products of the epiderm be so often conjointly affected?"

First, the development of the hair and teeth in the human embryo are more nearly contemporaneous than that of the other epidermoid tissues, the dental cap and the first covering of hair or lanugo being both noticeable about the fourth month of fetal life. They are both developed within a sac formed by the dipping down and unfolding of the epithelium. They are both formed and afterward nourished by a follicle.

THE HUMAN TEMPERAMENT IN ITS RELATION TO THE HUMAN TEETH.

Dr. E. M. Flagg, Asuncion, Paraguay.

In Columbian Congress. Reported by Mrs. J. M. Walker.

Dr. Flagg referred to a classification of the four elementary temperaments tabulated by him ten years ago, and traced the use of the term from remote antiquity as expressive of the differences in physical and mental constitution in the human family, due rather to mental than to physical causes, habits of mind producing a change in the expression of the body with more certainty than mere habits of body producing changes in the mental constitution.

Numerous examples were cited of temperamental combinations, tending to show that every phase of character, every form of

feature, every mental endowment may be variably identified through a discriminating study of temperament. He thinks a careful study of this subject would help to solve many problems now involved in obscurity. Dr. Thompson considers this subject of great practical importance, particularly in regard to the making of artificial teeth for edentulous patients.

Dr. Sudduth considers the teeth as types of temperament, a correlation existing between the physiognomy and the teeth. A scientific study of temperaments will give an insight into human nature, and he thinks that dentists would be more successful if they would make a study of this. Temperament has much to do with the intensity of inflammation. The sanguine temperament tends towards anti-inflammations, but also responds readily to the proper remedies. The lymphatic temperament is slow and sluggish and very undesirable to treat. Dr. Flagg spoke of the obscure cases often met with, and quoted Shakespeare to the effect that there are now, as in his day, "men whom nature makes by scores and hundreds, and puts no mark upon them." Also to the artificial conditions of society repressing all natural expressions, reducing all to a dead level and giving temperament no fair show.

DENTISTRY IN TURKEY.

EDITOR ITEMS:—Kindly allow enough space in one of the future issues of the ITEMS for the following answer to numerous letters which I have received, and am constantly receiving, in regard to dentistry in the East, and the possible chances of a new comer making a success in his profession should he establish himself in this end of the world.

These letters have lately been so numerous that I cannot find time to answer them individually. In fact, like the famous grasshopper of lamentation in the Bible, they have become a burden. Therefore with your kind permission, I will answer collectively a few cold, hard facts about dentistry in the East.

It seems to be the prevailing idea among members of our profession in America, especially those who have read little and never traveled beyond the confines of their own country, that a fortune awaits the American dentist wherever he chooses to locate in a foreign land. Now this is a brilliant mistake. One of the reasons for this idea may be the citation of the names of a few men who have been successful in practicing dentistry abroad from America ;

but the number of these names will certainly appear very much in the minority when one considers the whole number of our profession who have sought fame and fortune outside of the United States. Those who have made a moderate success, and those who have made a flat failure do not seem to be considered in the prospectus, and with characteristic American hopefulness each new pilgrim imagines he will be one of the fortunate, and this is too often attempted without considering the chances of failure, or the disadvantages with which he has to contend on his arrival in a foreign land, an alien within the gate of the stranger.

It is immediately on arrival that the new comer has an opportunity to make a favorable impression on the community in which he desires to establish. The first thing is to decide that he can assimilate with the manners and customs of the people; and the second and greater point is to do it. While eccentricity, or the introduction of strange habits may attract a few, the greater and more solid portion are quite content with established customs. The older the country, the more the old adage will be found to hold good: "When one is in Rome one must adopt the ways of the Romans." My experience in the East has proven to me that the most successful of all men in professional and business life are those who pursue the even tenor of their way, establishing confidence in the community without attracting undue attention. These are the successful men, and who have the confidence of the best class of the community.

Confidence is only another word for success, and the dentist who has only a few patrons and can preserve their confidence, is on a surer road to a competence than the owner of a gold mine.

It is all nonsense about there being plenty of room at the top. It is a mistake. There is not plenty of room at the top. In proportion to the distance between the commencement of a ladder and the top there are many rounds, each of which will accommodate a man, and, perhaps, be better calculated to sustain him in his individual ability than if he were at the top. There is work on every round of the ladder of life for the man who gets there by natural selection or force of circumstances. The one who gets to the top does so by reason of a superiority over his fellows, and retains his place by an ability which they do not possess. Every soldier does not become a general, and yet he does good work in the place where his abilities locate him. There is a place for every man, and while the ambition is laudable in any man who seeks to elevate himself above inherited surroundings, yet he who can perform

conscientiously the duties devolving on him under his circumstances, accomplishes his mission in the world with a much better chance for promotion than the man who waits for something better to turn up, or the one who expects to get there at one spring.

I am sorry I cannot give such a glowing account of dentistry in the East as my colleague published sometime ago about Venezuela. Dentistry in Turkey is not a new thing. The country, especially Constantinople, has been accustomed to good dentistry for some time, and it is demanded of the dentist here to be quite up to the times in the improvements of his profession. Turkey is not a wilderness, as is generally imagined, and while Constantinople may be backward in some of the improvements possessed by smaller cities, yet in a point of professional service as much is demanded as elsewhere, and appreciated in a corresponding degree. Many people in the world are in ignorance of the fact that Constantinople is connected with all the great cities of Europe by a system of first-class railroads, and that it is only a journey of three and a half days from here to Paris. Therefore it is easy to see we are quite up to the times, and the man who imagines to find here a market for out of date methods or merchandise will find himself greatly mistaken.

There is not a dental college established, but the Imperial School of Medicine has a curriculum, and a staff of professors which will bear comparison with many more widely known institutions. It is here that the candidate for the dental permission to practice must apply. He must have a degree from a reputable college, and must pass an examination before a selection of the professors, which must be in either French or Turkish, as may be his choice, after which, if successful, a certificate is given on the payment of \$30.80 in American money, entitling him to open his office wherever he chooses in the Empire, which includes in its broadness the historic city of story and song, Bagdad, which has not yet been invaded by the American dentist.

This formality established, an office must be opened and furnished in a manner becoming to a place which seeks a first-class patronage, as the rest of the population seek the services of the native dentists, and are of no use to the man who intends to establish himself in the European quarter. Then languages must be acquired if not already known, as each patient who presents himself prefers the conversation to be in his own language, or in one which he speaks fluently, and by the same token the dentist who is proficient in this respect becomes more of a power in his practice, and can

accomplish his operations with a greater saving of time, as well as making his argument more convincing. English is of little use, though it is spoken. French, Greek and Turkish are the principal languages, and if a man knows German, which has become quite a factor here, as well as Italian, it will quicken his chances to success. Certainly without at least two of these languages the new comer will be badly handicapped.

Now the elements of patience must be acquired, as they will certainly be required. Here most everything goes by word of mouth, and the people are rather chary of new comers and new ideas. They prefer waiting till recommended to the new office before beginning experiments on their own responsibilities. If with the necessary patience the candidate for dental patronage has enough cash to keep up a good appearance he may obtain a good practice.

From my own experience I can safely say that any dentist who can do good dentistry, and who knows how to conduct a practice, and will comply with these requirements, will have just as good a chance of success here as he can in any other place in the world where dentistry is appreciated and where dental services are sought.

But here a word of caution. I have stated the plain facts, and any man who comes here with the idea that this is an El Dorado for dentists, or that Turkey is a rich country, or that he will require a file of soldiers to keep the patients away from his door, or that he will find business as it was reported to have been in the first days when American dentists invaded foreign lands, will be doomed to a bitter and lasting disappointment. Mashallah.

F. R. Faber.

Logicians distinguish two kinds of operations of the mind. The first produces no effect without the mind, the last does. This wonderful piece of mechanism which does the thinking for us is the most valuable part of man. We gaze in the darkness of the night on the remarkable brilliancy of the arc light and wonder at the radiance thrown from so small a point, but the great light of our world is the light of thought. Brighter and brighter, as the years roll on, glows that light, fed from the source of knowledge. Every deep cavern of mystery is destined to be lightened by the dome of thought, the magic of the mind. Give your mind food for thought. Study and search science and literature in the pursuit of knowledge and improvement.

Review.

THE TOMBS OF ANCIENT HAWAIIANS.

We secured two guides, and after riding many miles over rough lava-covered land, reached a spot which our guides pointed out to us as the entrance to a burial-cave. It was near the seashore, far from any human dwelling, and from any place that could support a habitation. We could not believe at first that an opening could exist there large enough to admit a man's body, but with much labor we succeeded in removing the rocks so that by considerable effort we were able to force ourselves through. Leaving our unwilling guides at the entrance, we fastened a cord securely to the opening of the cave, lighted our candles, and proceeded to work our way down. Descending among the rocks till we were at least fifty feet below the surface, we suddenly entered a large room, perhaps forty feet high. There were no bodies here, but opening from this room on several sides there were low, narrow passages. Entering one of these, we followed it for perhaps a quarter of a mile. Part of the way we were obliged to crawl with great difficulty through the narrow tunnel. We were finally rewarded by finding ourselves in a large room, surrounded on every side by the objects of our search. Near the entrance some of the bodies lay as if hastily deposited, but most of them were laid away with care, some on shelves partly made with sticks laid in the rock at the side of the cave, more in an opening at the side (which the remains of a stone wall showed to have been at some time walled off from the rest of the cave), while the dim light of our candles showed us several openings in different directions, which doubtless led to other similar burial caves.

The knees were usually drawn up to the breast, tied with a cord and the whole wrapped in many folds of the native cloth or tapa. Some food had apparently been left by the side of each, with perhaps his fish-hook or spear, that he might not want for food in his future home. The air being very dry, and perhaps having some antiseptic property, many of the bodies were completely mummified. Deep dust lay on everything, and the stillness of death was over all. We could easily imagine with what awe the friends of those lying here had crept down at night and laid away their dead, for the greatest secrecy must be observed, so that none could ever be found. "I do not wish," said a dying chief, "that my bones should be made into arrows to shoot mice with, or into fish hooks."

We secured as many specimens of crania only as we were able to carry, packing them in bags. It was growing dark when we

emerged from the cave, and when our natives, who were waiting outside, saw our bags of bones and realized that they must help us to carry them home, they were in utter consternation. It was with difficulty that they could be persuaded to place them on the horses, and then, regardless of us, of road or path, they took the shortest way home as fast as their horses could carry them, not daring to look behind, lest they should see the pursuing ghosts of their ancestors, leaving us to pick our way as best we could over the rocks in the dark, without even a path, the eight or ten miles to our lodging-place.

Dr. J. M. Whitney, in World's Dental Congress.

THE TEETH OF ANCIENT HAWAIIANS.

Dr. J. M. Whitney.

We have been taught that primitive peoples, living in simple conditions, were in a great measure free from dental caries as we see it in the mouths of our patients, and that many forms of dental disease with which we have to contend were, with them, wholly unknown. This seems to me an erroneous teaching, from what can be learned from these records. An exceptional opportunity of becoming acquainted with the crania of the ancient people of these islands during the twenty-four years of my residence here has convinced me that both in the case of those buried in the caves, and of those more recently found in the sand, not more than 25 per cent have been free from caries, irregularity, or disease. Indeed, I think I have discovered every form of dental disease known to our practice. Dental caries in all its many types, necrosis of the teeth, erosion, alveolar abscess, pyorrhea alveolaris, disease of the antrum of Highmore, necrosis of the maxillary, ankylosis of the jaw, salivary calculus, etc.

Here was a well-developed osseous system; the individual was trained to exercise of the kind that would develop every part of the structure. Living on an abundance of the simplest, yet the most nutritious and bone-developing foods that would not cling to the teeth, but would exercise and clean them with not an element lacking required by our present knowledge, yet the same dental disease from which we suffer, burdened the lives of the ancient Hawaiians.

While this is true, I have been interested to find that the teeth of those who died before civilization had introduced to the people

peculiar constitutional diseases, acid fruits and vegetables, fine flour, and varied foods, were much less seriously attacked by disease than afterwards. As a general statement the teeth would be found clean, and when caries existed it was here and there in teeth of both maxillaries and on both sides, but not so pervading as found in the more recent crania, or in the mouths especially of the young of the present time. •

We have often accounted for the irregularity of teeth found so common among Americans, by the mixture of races of which our nation is composed. We say that the wide teeth of the large jaw of one race, being crowded into the narrow jaw of another race with which it has mingled, would of necessity produce an irregular arch. But here is a people, isolated from all others for at least thirteen hundred years, with no admixture of races; yet irregularity of the teeth of both maxillaries was almost as common as it is among the mixed races of to-day. It would be difficult to give a good reason why a fixed type for the mouth of this race should not have existed a thousand years ago, and that all, with rare exceptions, should have been modeled from it, had nature designed that there should be absolute uniformity in her work.

Among the crania I have examined I have noticed that the teeth are set closely together and well rounded, and that the dense part of the enamel, near the cutting-edge or grinding-surface, strikes its fellow at that point, the whole being held firmly by the buttressed third molar. This type is somewhat fixed.

Perhaps next to dental caries, the greatest source of oral disorders among these people was the irregularity of the third molar, often producing in them as serious consequences as with us; while its failure to erupt was nearly or quite as common as we find it in our daily practice, so that we cannot argue, from these remains at least, that the coming man is to be deprived of this useful organ.

The relation of food and disease to the health of the dental organs is strongly demonstrated from a study of the changes shown in the teeth of those buried in the oldest caves, and so down through the more recent burials in the sand. Then of those who were the old people a quarter of a century ago, whose childhood was passed before civilization had touched their primitive life and their grandchildren who are now in our schools. These children, as shown by actual examination, have but little better teeth than their white school-fellows. Their parents, however, may have better teeth than the children, but it would be an exception if they had not been to the government physician and had aching teeth removed,

while the grandparents, the old men and women whom I found when I first went to the islands, had teeth proximating those found in the old caves, though not as good.

WATER CURE.

Water can cure more people by far than is generally supposed. Water is able to create a centrifugal power and aids in the elimination from the body of effete material. No surgeon can ever make such an opening as is made by nature when supported by water. In this way, I often think that though such small operations as are done by dentists on structures of low vitality are indispensable, yet the therapy of all oral diseases of inflammatory character may be materially aided by water treatment. For instance, if we wish to get rid of effete material in a root canal, it would be a good method to introduce something, such as linen fibers soaked with water, which creates a centrifugal power and helps to remove it. It would then be cleaned. A root canal cannot become clean by introducing drugs and leaving behind effete material. Sterilization is not so perfect in the removal of such material as the centrifugal power created by the proper application of water.

Dr. Hans Block.

Some time since a merchant came into my office bringing an orange some one had bitten into.

"Doctor," said he, "can you tell who bit into that orange?"

"Yes," we said; "it was a young man for whom I am making a part set of teeth."

"Can you swear to it?"

"Yes; here is the articulation I took of his month only yesterday."

"What was his name?"

"Joseph Fairbanks."

The articulation fitted the bite into the orange precisely. The left lateral was turned; the right cuspid was prominent, and the right central I was to restore, was absent.

While the family were at church he had broken into the house and stolen money and other valuables. The orange was one of three left on the center table, too sour to eat.

He was convicted and sent to prison.—EDITOR ITEMS.

THE ALUMINUM AGE.*

John G. Harper, D.D.S., St Louis.

Lavosier, 1743-1794, first suggested the existence of metallic bases of earth and alkalies. The first researches in the preparation of aluminum date back to 1807, but it was not till 1827 that Woehler isolated the metal, which was impure. The honor of obtaining aluminum almost perfectly pure was accomplished in 1854 by H. St. Clair Deville, who was able to determine its true properties. He first undertook his researches in the laboratory of the Normal School, Paris, and was afterwards aided by the liberality of Napoleon III. to carry on his researches on a larger scale at the chemical works of Javel. At these works were made the objects of aluminum exhibited at the Paris Exhibition in 1855. The metal at that time was worth about \$100 a pound, in 1857 it was sold at \$32 a pound, in 1884 at \$15 a pound. Within the past year it has sold for less than \$1 a pound, but has recently advanced to \$1.25. The quantity of metal produced has never been large. In 1884 France made a little over 4,000 pounds, and the United States 100. In 1889 the United States produced 47,500 pounds, valued at \$95,000,

We have no other metal so widely distributed and in such abundance, as aluminum. All clays contain from 15 to 25 per cent. China clay and bauxite contain from 40 to 80 per cent of oxid of aluminum, which is equivalent to 25 to 40 per cent of aluminum. There are millions of tons of china and fire clays in the State of Missouri alone. Bauxite is found in great abundance in Alabama, Georgia and Arkansas. Aluminum is not found metallic, but the combinations of aluminum with oxygen, the alkalies, fluorin, silicon, and the acids are so numerous and occur so abundantly as not only to form mountain masses, but to be the bases of soils and clays. Especially numerous are the combinations with silicon and other bases, which, in the form of feldspar and mica, mixed with quartz, form granite. Most of the aluminum compounds appear dull and disagreeable, such as feldspar, mica, pigments, gneiss, porphyry, etc.; yet there are others possessing extraordinary luster, and so beautiful as to be classed as precious stones, such as ruby, sapphire, garnet and cyanit. Bauxit and cryolit are the minerals most used for producing the metal, on account of their purity. Cryolit is found in Greenland; the only known deposit in the United States is that found near Pike's Peak, Col.

Pure aluminum is a beautiful white, with a slight blue tint,

* Read at Missouri State Dental Association, 1893.

closely resembling pure silver. Working the metal increases the bluish tint. The metal may be polished and burnished, it being necessary to use an intermediate substance between the burnisher and metal, a mixture of equal parts of rum and olive oil is recommended. The metal has no odor or taste. The malleability is equal to that of gold or silver. The metal is quite ductile. The elasticity, according to M. Wortheim, is about that of silver. Fremy says it can be scratched by silver, but by hammering it becomes as hard as iron, and that the tenacity is between zinc and tin. Deville mentions a very curious property which aluminum shows. The purer it is, the greater the sonorousness, so that a bar suspended by a fine wire and struck sounds like a crystal bell. The specific gravity is two and one-half times that of water. The fusing point is about 700° C. Watts says the metal heated in a closed vessel does not exhibit the slightest tendency to volatilize. Deville states that the metal conducts electricity perhaps equal to silver and eight times better than iron; it conducts heat better than silver and copper.

Air, wet or dry, has absolutely no action on aluminum. With pure aluminum the resistance to direct oxidation is so inconsiderable that at the melting point of platinum it is hardly appreciably touched and does not lose its luster.

Woehler found that aluminum leaf burns brightly in air and in oxygen with a bright light. Water has no action on the metal.

The true solvent of the metal is hydrochloric acid. Alkaline solutions act on the metal, caustic soda being the most active; weak acids and alkalies have very little effect on the pure metal.

Aluminum unites very easily with most metals, the combination being usually accompanied by a lively disengagement of heat. The alloys have important application. The alloys most frequently used are copper, silver, and tin. These owe their numerous uses to their fine color, their resistance to most chemical agents, and the facility with which they may be worked. Perfect imitations of gold are produced by alloying with copper, the proportions being nine ounces of copper and one ounce of aluminum; this alloy works like iron, and its tenacity is equal to that of steel. The following alloy has a beautiful white polish, which is a close imitation of silver; copper, 100; nickel, 23; aluminum, 7 parts.

In making many castings 0.05 per cent of aluminum is added to the iron, which lowers the melting point 500 degrees, making the charge more fluid, the resulting casting being superior to iron castings.

CURRENT THOUGHTS.

THE BREATH.

Dr. J. Taft.

Impure breath is liable to occur at all periods of life. It is found in a great variety of phases—from the slightest perceptible deviation from the normal state to that in which it is loaded with a large amount and great variety of excrementitious matter from various sources, perceived sometimes even by the sense of taste, at least so far as the patient is concerned, but more especially by the olfactories, making such an impression through this channel as to produce nausea, and, indeed, the infection of contagious diseases may be carried from one person to another by the breath. A vitiated breath as a means of conveying the seeds of diseases is great.

We involuntarily turn away from the fetid breath of even our best friends. One may be beautiful in face and form, attractive in manner, and fascinating in conversation, and possess personal magnetism that may be well-nigh irresistible, and yet an offensive breath will neutralize the influence of all these qualities.

In no other relation is this subject of greater moment than that existing between the dentist and his patient.

The degree of offensiveness is modified by the acuteness of the olfactories of one or both parties, together with the conditions of the exhalations, and the course or sources of the fetid breath.

If the dentist is subjected for a considerable time to this condition of things, his general health may become affected in a more or less marked degree, according to his own susceptibility, and to the degree of vitiation of the air he is compelled to inhale. There can hardly be a doubt but what many suffer very greatly from this cause; and though one may not suffer much, or apparently at all in this respect, yet a sense of discomfort and uneasiness is always experienced by the dentist in his professional work when subjected to a vitiated atmosphere, and this will necessarily interfere somewhat with the thoroughness of his operations. It is a serious question whether the dentist ought ever to subject himself to such embarrassments, at least for more than a few minutes at a time. It certainly would be for the welfare and interest of both the patient and the dentist, were the former to be put on proper treatment before having extended operations made on the teeth.

The offensive breath of the operator is a matter of special interest to the patient as well as to himself. The dentist has no right to make himself, or even to be a nuisance in any respect to those whom he serves, and if he has any just appreciation of the fitness of things, he will see to it that his presence in every respect is rendered as little objectionable as possible.

The patient is not likely to suffer ill-health or prolonged discomfort from the fetid breath of the dentist, and, indeed, many of less acute sensibility will be inclined by and by to seek more acceptable service.

The dentist should be able at all times to discriminate in regard to the character of his own breath; it may sometimes be a necessity to submit to this annoyance from others, but he should see to it that he never imposes on his patients in this way. I have known superior operators—persons of gentlemanly deportment in every other respect—whose breath was in such a condition as to disgust all those who came within its influence; indeed, I have known some such who were compelled to abandon the practice of dentistry.

There are some instances in which this affection seems uncontrollable, but generally it is amenable to proper treatment, and can either be modified, masked, or wholly eradicated.

Derangement of the stomach, alimentary tract, kidneys, liver or skin is almost certain to result in more or less marked change of the breath, from the fact that in part, at least, the waste that thus fails to be removed is thrown into the lungs, and will, in many instances, produce a markedly offensive breath. But in some instances the breath may be contaminated with excrementitious matter that possesses little or no offensive odor. The defective function of the digestive apparatus is, in nearly all cases, a source of fetid breath. Disease of the lungs of almost every variety is attended with more or less vitiation of the breath.

Of the local sources of this difficulty there are many, and of these there may be said to be two classes, the one embracing all the local disorders that may contaminate the breath after it leaves the lung; this will embrace the various forms of diseases found in the throat, mouth and nose. Diphtheria, scarlet fever, tonsilitis, and, perhaps, some other affections, though affecting the entire system, possess a local manifestation that results in greatly vitiated breath.

The various catarrhal affections that are found in the nose, the throat and mouth, in all cases more or less affect the breath, ranging all the way from the very mild, almost imperceptible change, to

an intolerably disgusting degree. This affection should be well studied by the dentist, in order that he may be able to give his patient some, if not permanent, relief, and that he may protect himself so far as he may against an intensely annoying and offensive condition.

Diseases of the gum and mucous membrane of the jaws are often the occasion of this offensive condition. This will result, sometimes, from a vitiated exudate from the mucous membrane, or it may occur, as is frequently the case, from a discharge from the margins of the gums, and from the sockets of the teeth.

Necrosis and sloughing of the bony tissues of the sockets nearly always produce a very offensive condition.

The discharge from alveolar abscess is oftentimes so vitiated as to load the breath which passes out of the mouth with an exceedingly offensive odor.

Decayed teeth are charged, especially by various medical writers, as a very frequent cause of offensive breath. This is true not only of physicians, but to a greater extent, perhaps, of the laity. There is not, however, as much in this as is usually attributed to it. Occasionally cases are presented in which an exceedingly foul breath is wholly attributed to one small innocent cavity of decay in the grinding surface of a molar tooth. Were all other causes of offensive breath eliminated, than that which comes directly from the decay of the teeth, there would be, in the aggregate, an immense improvement.

Another fruitful source of offensive odors of the oral cavity is found in the presence of foreign substances, or matter in the mouth in the shape of soft salivary calculus, accumulation of food, and a glutinated mucous deposited on the teeth or the artificial dentures undergoing decomposition, and necessarily throwing off an effluvia that will be mixed with the breath. The saliva and mucus, mixed thus with foreign substance, and retained for an undue time in the mouth, will undergo such change as to present a very offensive condition. Now as to these extraneous causes of the affection under consideration, it is not difficult for the educated patient to determine what should be done; simply purification of the oral cavity in the most thorough manner by the entire removal of all offensive material, and after this the intelligent use of disinfectants on the teeth, mucous membrane and dental plates, if they are in the mouth.

With a large variety of disinfectants, antiseptics, cleansing materials and methods there is no difficulty in rendering almost

every such case free from the objectionable condition, for a time at least sufficient for operations.

A great many formulas have been given for the correction of offensive breath ; the suggestions made for the use of these, however, in the majority of cases, are on a false basis ; with many of them it is only the substitution of one odor for another, or the mixing of two offensive conditions, and producing a third that is, perhaps, temporarily more tolerable than either of the others.

In treatment here, however, the aim should be, as in all other medical treatment, to attain the most permanent results ; that, doubtless, is the true theory of all medical and surgical practice.

Temporizing should never be employed when something better can be attained.

It is very desirable that the profession should give more attention to this subject than hitherto. In our literature very little will be found on this subject, and in all medical literature, so far as I have been able to examine, only a fugitive reference to it has been here and there made ; and I may here refer those who have not investigated the subject to a little work entitled " The Breath and the Disorders which give it a Fetid Odor," by Dr. Joseph W. Howe, the third edition of which was issued in 1885, and a paper published in the *Dental Register*, by Dr. D. C. Hawxhurst, vol. xxvii, page 104.

Ohio Journal.

POSTHUMOROUS WORDS FROM A PETRIFIED MAN.

It was discovered on Wednesday that the right hand of the petrified man lately found at Chadron grasped a small iron box, which was removed by means of a cold chisel and opened. In it was found a strange manuscript, apparently faded, and it was deciphered only by long and patient effort. It was written in the old English style. The following extract, reduced to modern English, is but a small portion of the document, but it gives an insight to the causes leading to the death of the man :

" Only a few years ago I was considered a sound and healthy man, and believed myself to be one. But one evil day my wife wrapped my lunch in an old newspaper which we had brought with us from England, and at noon, while eating, I commenced reading an advertisement which stated that when one experienced ringing in their ears, that tired feeling, dizziness, distress after eating, shooting pains in the left lung, dimness of vision, and palpitation

of the larynx, it was a sign that the subtle shafts of disease had attacked him, and that his only hope of avoiding an early grave was by taking Dr. Hankum's Cold Handled Pills according to the directions on the box. Imagine my grief and consternation! I had experienced all these symptoms and the crushing fact came home to me that I would soon be a pallid corpse unless I secured some of Dr. Hankum's Pills.

"But how was I to get them? I was a poor man; but my wife had a few trinkets, heirlooms they were, and so I rushed home and explained matters to her. She wouldn't believe that I was seriously ill, but at last consented to sell the trinkets, and with the proceeds I bought the pills. Of course I ceased work; a sick man cannot toil. And we grew poorer and poorer, till there was nothing to eat in the house. I sold the house to buy more pills and some of the doctor's Extract of Red Elm, but kept growing worse, and my wife left me and went to her parents, and I finally became a physical wreck, with a craving for pills which nothing could appease. Now that I can purchase no more pills I am about to commit suicide, for life without them is unendurable.

"Ah, me! Had I never read that advertisement I might now be well and strong with my loving friends about me. Reader (if this ever finds a reader), if there is a ringing in your ears, let her ring! If you have shooting pains in your lungs, let 'em shoot! Worry not over that tired feeling or distress after eating! And beware of Dr. Hankum's Extract of Red Elm."

Exchange.

TEMPORARY FILLINGS.

By Prof. C. N. Peirce.

In considering the advisability of materials for temporary fillings, we must take into consideration the location of the cavity to be filled, and also the condition of the tooth. Those two things would modify my practice very much as to the selection of material. We have, of course, several preparations used for that purpose, and used very advisedly in certain teeth. If I had a cavity in the central incisor of a child, for instance, or where the patient was not able to stand a gold filling, or where there was not sufficient room to put in a gold filling, as on the mesial or distal surfaces, I should prefer to place in a filling of gutta-percha, or phosphate, or chloride cement, believing it would be comfortable and thoroughly protect the tooth from decay as well as any other

material, being attended with less tax on the patient or the endurance of the child. On the other hand, if the cavity was on the masticating surface of the first molar, and I desired to insert a temporary filling, then I should prefer a zinc-phosphate filling, believing it would give more durability and would as well protect the tooth from further progress of caries. Where the cavity is on the mesial or distal surface, whether anterior or posterior, where I desire a filling for temporary use, lasting as a minimum three years, I am in favor of using gutta-percha. With deciduous teeth I prefer the pink, because it has some advantages over the ordinary white gutta-percha. The pink gutta-percha in a child's deciduous tooth adapts itself at a low temperature to the cavity, and also has a degree of resistance that the white does not, because of its greater elasticity or the less amount of mineral substance in the material. I think these three materials—pink and white gutta-percha and zinc-phosphate—are the best. The practice must be varied according to the location of the cavities, and also by the age and endurance of the patient. I have had good results with pink gutta-percha where I could do little more than wipe out the cavity and warm a pellet and press it in. With an irritable patient and disinclined to have anything done with the cavity, and where it is impossible to keep it dry, take out the softened part and pack in pink gutta-percha. In my hands it has produced very good results, protecting the teeth from further decay for a period of three or four years.

In permanent teeth, where color is of some importance, I should use the white, but that requires more softening and does not have for the masticating surface so resisting a capacity as the pink. I meet with a great many fillings, placed in by myself and others, of zinc-phosphate, but they vary so much in different mouths that they are not reliable. I see fillings often that have been in for three, four, or five years, and they keep their integrity well, but in other cases they have dissolved and grown imperfect at the cervical margins quite early after being put in; so that I do not consider phosphate of zinc so reliable in cavities bordering on the cervical margins as I do pink or white gutta-percha. But one of these three materials is used invariably where I want a temporary filling lasting from one to three years.

International.

Dr. Ottolengui, in the *Medical Abstract*, says caustic pyrozone is especially valuable on pus generating surfaces, such as pyorrhea alveolaris; also, in other pus yielding diseases, such as abscesses

MIGRATION OF A CUSPID TOOTH.

A lady, aged 56 years, had worn a full upper set of teeth, with comfort, for twenty years, when one day there began a dull pain and ache in the region of the right superior cuspid. This pain continued for six months, and was followed by a slight swelling of the gum and a discharge of pus from the outer surface of the gum, which continued for eight or nine months. The discharge then stopped and the sinus healed, but the pain increased, sharp, darting pain, extending to the face and head, which seemed almost unbearable. No relief could be obtained from ordinary means, and this condition continued for several weeks, when an opening presented itself in the roof of the mouth, and suppuration ensued. The sharp lancinating pain subsided, and gave place to a modified form, that of headache, severe at times, and usually in the region of the forehead. The discharge from the roof of the mouth continued for about three years, when it ceased. Soon after, however, an opening appeared in the floor of the nasal tract and large quantities of pus discharged. This discharge continued for about two years. At this time the lady contracted a severe cold, and during its progress noticed an obstruction in the nasal passage. After considerable effort this obstruction was dislodged, and proved to be a well defined cuspid tooth, somewhat affected by decay. The discharge ceased, pain in the head disappeared, and the patient regained her former health.

For a number of years she had been treated for catarrh, as the condition affected her throat and nose most of the time.

Dr. W. H. Spaulding, in Ohio Journal.

NUMBER OF DENTAL COLLEGES AND STUDENTS.

Dr. Ottofy reports to the American Dental Association that there have been established since last year the Dental Department of Tennessee Medical College, at Knoxville, Tenn.; the Chicago Tooth-Saving Dental College, at Chicago, Ill.; the Dental Department of the Homeopathic College, at Cleveland, Ohio; the Dental Department of the Western Reserve University, at Cleveland, Ohio; and the Dental Department of the University at Buffalo, making an increase of five over the previous year. The total number now in operation is thirty-eight. The number of graduates in 1891 was 1,241; in 1892 there were 1,483. The average in the last seven years is 904 graduates per annum. The superfluity of many of these colleges was well demonstrated last year, when attention

was called to the fact that it required the strength of fifteen colleges, more than one-third of the number, to graduate less than 100 students; eight more turned out 150, while twelve colleges out of thirty-three graduated more than three-fourths of the entire number. We have here a tabulated statement of all the dental colleges. Two of the new colleges have held no commencement. It required this year the force of fourteen full fledged colleges, with their equipments, Faculties, etc., supposed to be perfect, to graduate ninety-one students, an average of six and one-half each. In fact, eleven colleges together graduated fifty-one students. Who can estimate the terrible loss to the profession, were eleven colleges to be suddenly taken off the list? Eight hundred and fifty-one were passed from ten institutions, or a little more than one-quarter of the entire number of colleges graduating almost two-thirds of the list. The three years' college course does not seem to have had the ill effect so strenuously predicted. On the contrary, the number of students entering the colleges, though smaller, is superior. They fully appreciate the additional advantages gained. The number of years which a student should devote to dentistry will soon be placed at four years of nine months each. Any young man, with a proper preliminary education, will find that time sufficient to become proficient. There are now about one hundred and thirty local societies in the United States, with an aggregate membership of nearly five thousand.

International.

Pinus canadensis cannot be too highly recommended as an application to burns, especially when very extensive, the skin being entirely removed. A weak solution in glycerin is squeezed from a sponge over the denuded surface, which is then dressed with some soft ointment, either with or without the *pinus canadensis*. Pain immediately abates, and the healing process is wonderfully rapid. The solution must be freshly applied, as often as the dressings are renewed.

Southern Journal.

Dr. J. Leon Williams has received, by command of the Queen, a letter of thanks from Sir Henry Ponsonby, for a copy of his book, "The Home and Haunts of Shakespeare," which he recently presented to Her Majesty. Dr. Williams is a well-known American dentist, who has utilized his holidays and spare hours for the past four or five years in the production of this elaborately illustrated and costly work, which has received much critical praise from the English and American press.

REUNION OF PARTS SEVERED FROM THE BODY.

On January 2d, 1890, a machinist came to the Johns Hopkins Hospital saying, that morning, while going about a machine used for chopping blocks of tin, he dropped something, and while stooping down to pick it up his hand slipped under the knife, and the ends of the middle and ring fingers were cut off. The middle finger was cut off just beyond the last joint. The joint was opened. The ring finger was cut off just above the root of the nail. He wrapped up the stumps and went home, where his wife covered the wounds with beeswax. He arrived at the hospital at twelve o'clock. I asked him where the stumps of the fingers were and he produced them, wrapped up in a piece of newspaper. They were very cold, almost frozen. I placed them in a basin of warm water, using no antiseptic, because bichlorid or carbolic acid might cause a layer of coagulation necrosis and prevent union. I scrubbed up the stumps of the fingers with a $\frac{1}{2000}$ warm bichlorid solution, then carefully rinsed them in warm water. This process consumed half an hour. Then I took a shaving off the ends of the fingers, so as to have a perfectly fresh surface. The stumps were treated in the same manner. The bone was scraped. I sewed them on, using four stitches in each case. I then applied strips of crepe lisse with collodion the whole length of the fingers on each side. These held the severed portions in exact apposition. Then I used other strips around the fingers, binding them together, and applied a palmar splint and used a large absorbent dressing. He came back in a week, and when the dressing was removed the fingers looked very well. I reapplied the dressing and told him to report in another week. Dr. Brockway saw the case on his return at the end of the second week. He took out the stitches and removed the dressing, and said without doubt the fingers had united. He said there was sensation at the ends of his fingers. There is now a slight motion in the joint which was opened, and the sensation in the fingers is perfect.

Dr. Randolph Winslow added: This case of Dr. Finney's calls to my mind a case which I had about fifteen years ago. I was called one day to see an upholstress. She had chopped the end of her thumb off with a hatchet, half an hour before I saw her. On inquiry about the missing piece, I was told that it was about the floor somewhere. I hunted it up, cleaned it, put it on with adhesive strips, and it is there to this day.

THE STATUS OF DENTISTRY IN MISSISSIPPI.*

Dr. C. W. Robinson, Magnolia.

He asked: Is dentistry a profession, or is it a trade? Are we specialists in medicine and surgery? Are we mechanics? Or are we nondescripts? He quoted the fact that in 1878, at a session held in Richmond, Va., the American Medical Association declared that dentistry was a specialty of medicine and surgery, and that all dentists practicing under diploma from any reputable college of dentistry were entitled to the rights, benefits and privileges derived from their Association of Doctors of Medicine—thus admitting the importance of this branch of surgery.

Medical colleges make no distinction in the status of their dental departments; the civil law likewise makes no distinction.

In the State of Mississippi, however, Dr. Robinson pointed out a marked discrimination in favor of the medical practitioners, which he characterized as unjust, humiliating and inconsistent. As evidence of this he instanced the payment of a privilege tax by the dentist in common with tradesmen and mechanics, from which the physician is exempt, though both are licensed by State Examining Boards, paying the same fee, and being registered in the same book in the Recorder's office. Again, the physician is exempt from jury duty, while the dentist, unless excused by courtesy of the court, must close his office and leave his patients perhaps at the most critical moments, to be shut up possibly a week at a time in a little ill-ventilated room, perhaps the only white man on a negro jury. He said: Is this right? Is this just? We are either specialists of surgery and medicine, or we are mechanics. If the former, then by virtue of the diploma we hold as Doctors of Dental Surgery we are justly entitled to all the rights and privileges enjoyed under the law by the general surgeon. If the latter, then the D.D.S. has no meaning, and our diploma is but a worthless piece of paper, and the State Board of Examiners superfluous.

Dr. O. Hildebrand, of Goettingen, reports in the *Medical Record* the case of a boy of 14, who, since the age of 12 years, had had 150 to 200 teeth of various sizes removed. A year and a half later 17 more were removed, with evidences of others coming.

*Reported by Mrs. J. M. Walker.

INTERNATIONAL REVIEW.

By George Randorf.

INJECTIONS OF PHOSPHATE OF SODA IN NEURALGIA.

Dr. Crocq, Jr., of Brussels, has employed successfully hypodermic injections of phosphate of soda in *trijumal* neuralgias, and Dr. Glorieus is using it with good results.

The following is the formula used by Dr. Crocq :

Phosphate of soda	2 grams
Distilled water.....	100 "

For hypodermic injection.

The first day he injected one cubic centimeter, increasing the dose to three cubic centimeters on the fourth day, and continuing till complete recovery.

The following is good but causes pain :

Phosphate of soda	2 grams
Alcohol.....	5 "
Sterilized water.....	100 "

The author observes that these injections may sometimes fail, the same as other therapeutic agents, such as antipyrin, quinin, etc., but they are safer.

SHEEP WITH GOLDEN TEETH.

On the teeth of sheep and other ruminants, a metallic shining covering is observed. In Germany the occurrence is rare, but in southern countries, like Sardina, Sicily, Creta, Greece, Syria, Mesopotamia, Persia, Egypt, etc., it is more frequent. There the covering is considered as real gold, and gave rise to the tradition that the sheep owe their "golden teeth" to a wonderful plant, "gold cabbage."

This plant shines at night and possesses charming powers. It is known among the Greek shepherds as *lampionia*, *i. e.*, the illuminating. There is a tradition that wise men know how to obtain gold from the gold cabbage.

The most curious thing about the matter is that the shepherds ask the learned men to find that gold cabbage for them. As to the gold shining covering of the sheep's teeth, different examinations have imposed the conclusion that it is a sediment from the saliva, and therefore a metal shining tartar.

ACTINOMYCOSIS.

A rare case of actinomycosis of the cheek and the right inferior maxillary, spreading to the right lung, is reported by Prof. Poncet, of Paris, France, in the *Revue Trimestrielle Suisse d'Odontologie*.

Mrs. Claudine, fifty-nine years, has been cultivating her land for thirty years, and from her childhood possessed excellent health. She owns two cows, and when questioned as to the state of their health, explains that when a blow is given on the mouth of these animals, swellings are sometimes developed, which never heal.

About the 10th of April, 1892, the patient suffered from a second inferior right bicuspid, which had been carious for a year and gumless. The patient extracted it with her fingers.

Eight days later a right sub-maxillary adenitis was formed, which lasted one month. The sufferings were so great the patient could not sleep. The adenitis suppurated, and a fistula was formed. The sub-maxillary tumefaction gained the angle of the mouth and the salivary duct of the cheek; new centers of suppuration and new fistulas soon appeared, reaching even the nasal fosse, and the superio-external angle of the orbit.

Soon pulmonary phenomena appeared, and the patient, losing strength considerably, decided to enter the hospital.



In pressing the fistulas formed, as illustrated, a purulent, sticky, bloody liquid comes out, and from the issue of the first drops Dr. Poncet proves the existence in that pus of small yellow grains characteristic of actinomycosis. In each drop there is at least three or four. The microscopical examination confirmed the presence of a case of actinomycosis. A lesion was also found at the apex of the right lung, and an examination in the laboratory showed the presence of actinomycosis, the absence of tuberculous bacilli being especially conclusive.

December 4th the patient left the hospital in about the same condition as when she came, there was a real cavity at the apex of the right lung, but the left one was sound; the diffusion of lesions, the propagation into the lungs forbade all intervention.

PRODUCTION OF GUTTA-PERCHA.

By George Randorf.

To obtain gutta, the inhabitants of Malaysia (a group of islands south of Siam, and seat of the recent Franco-Siamese controversy) continue destroying the valuable trees yielding this juice. The sad consequence of this barbaric method has attracted the attention of the French government for some time. A scientific expert has been commissioned by France to investigate the subject, and suggest, if possible, less destructive means of obtaining it.

Dr. Sérullas, the commissioner, thus describes the ways of the Malays: After felling the chosen tree, they cut off all branches, as the leaves continue to draw from the trunk the juice containing gutta; they then make several parallel incisions in the bark, which convey the liquid to small cavities at the end, where the contents are deposited, coagulating almost immediately. These deposits are placed in boiling water and beaten with wooden mallets. The raw gutta is made into loaves and delivered to the Chinese merchant. The quantity of gutta obtained from a tree thirty years old is about 265 grams.

By this process 3,144,847 kilograms of gutta were exported to Europe in 1884, which would necessitate the destruction of 12,000,000 large trees. The tree itself is capable of propagating its species at the age of thirty—*i. e.*, just about the period it is considered ready for the axe. It is evident the extinction of this whole species is only a matter of time. Indeed, the quantity of exported gutta has been diminishing since 1884, while its price is rapidly rising from nine francs per kilo in January, 1889, to seventeen francs in July, 1891. The production diminishes, but the consumption is increasing.

Dr. Sérullas succeeded, by a chemical process, in obtaining more kilos of gutta from a live tree than the natives did by destroying it. The vegetal debris, consisting of dried leaves, are pulverized and suspended in a solution of toluene. At the end of a few hours, after the gutta is dissolved in the toluene, the whole is thrown into a draining-vessel on a cotton filter; after the filtering of the toluene, the remainder is lixiviated with tepid toluene. A toluenic solution is obtained, thick, sticky, and colored in green by the chlorophyl. To separate the toluene from the gutta, a current of vapor is passed through the toluenic solution at 100°, one part of vaporized water carrying off three to four parts of toluene. The green color may be eliminated, but it does not affect the quality.

ITEMS.

Sycophancy, flattery and nonsensical familiarity are despised; but pleasant frankness, truthful compliments and genuine sympathy are sometimes appreciated.

* * *

INCREASED FACILITIES FOR DENTAL EDUCATION.—The thirty-eighth catalogue and report of the Pennsylvania College of Dental Surgery announces the reopening of that institution in its new quarters at Eleventh and Clinton streets. For many years it was located at Twelfth and Filbert, but the constantly increasing number of students, with the wish of the Faculty and officers to provide increased facilities for teaching, made its removal necessary. The institution is one of the oldest and largest devoted to dental education in the world.

* * *

Bones may be bleached by placing them in a solution of eleven ounces of caustic soda in forty-five ounces of water; after having been left for two days in this liquid, wash in water and immerse in a solution of seventeen ounces of sodium sulphit in forty-five ounces of water. At the end of five or six days, one ounce of hydrochloric acid in five ounces of water must be added to the solution, in which the bones are to be left for two days more, well covered. Then take them out, wash in water and dry. An effective method of bleaching bones so as to give them the appearance of ivory, said to have been first used at the Bavarian Museum, is as follows: After digesting the bones with ether or benzine, to remove the fat, they are thoroughly dried and immersed in a solution of phosphoric acid in water, containing one per cent of phosphoric anhydrid. After a few hours they are removed from the solution, washed in water and dried, when they will have the appearance indicated.

Druggists' Circular.

* * *

NOTE.

The article "Oral Diseases, Surgical and Non-Surgical" is again compelled to lay over through the delay of the lithographers. This annoyance is no more exasperating to our readers than it is to ourselves, but with the conclusion of the article in our December issue a very decided change will take place in the publication date of ITEMS OF INTEREST, and if it is a mechanical possibility we shall have the magazine out near the first of each month hereafter. In the meantime we ask the indulgence of our readers for recent delays.

OUR QUESTION BOX:

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

Question 121.—*A man, 28 years of age, with upper incisors, cuspids and bicuspids striking inside of corresponding lower teeth, is unable to masticate his food properly. The teeth are all in good condition. Upper left first molar and lower first and second molars are missing. The centrals are beveled considerably on labial surface. What can be done to improve the condition?*

Bridge the vacant spaces and judiciously expand the upper or contract the lower maxillary so as to produce the desired occlusion.

W. D. Tickner, Randolph, Wis.

Only two things to do: Either extract and insert a set with bicuspid and molar buccal cusps just meeting lingual cusps of lower teeth; or, make porcelain or gold facings on upper bicuspids, on the Land method.

L. P. Haskell, Chicago, Ill.

I would do bridge-work or extract teeth and improve the looks of patient, at the same time articulate the teeth for proper mastication. By no means attempt to straighten teeth.

Richard Kessel, Buffalo, N. Y.

Any attempt to regulate would undoubtedly do more harm than good, owing to age of patient. The most practical way would be to remove incisors and first bicuspids—any teeth the case indicates—and use teeth retained for Richmond crown or anchorage for bridge. This will overcome deformity and give better masticating surface.

Dr. F. B. Rees, Cincinnati, Ohio.

The upper teeth might be forced out by suitable appliances till they close over the lower. When the antagonism is properly restored there will be no further difficulty in mastication. It may require the extraction of a tooth on each side of lower jaw to bring the lower front teeth back sufficiently to allow an over closure of upper teeth.

R. E. Watkins, Eutaw, Ala.

I would try to push lower teeth in and backward by a very strong spring clamp—spring steel if necessary. I would extract right first molar to give space to move backward, and at same time move upper teeth out. Move bicuspids with jack-screws. Take half round gold wire, bend around model of upper jaw and make bands to fit loosely the two second upper molars. Solder a band to each end of the wire, allowing the wire sufficient length to arch a little distance in front of incisors for the attachment of little hooks. Place the bands on molars and the wire will be in position to put small rubber bands around front teeth and over the little hooks. By this means the incisors can be pulled forward, and, with the lower teeth pushed back, the occlusion will be good.

J. F. Johnston, D.D.S., Ruston, La.

Question 122.—*What objection is there to German silver for backing plate teeth and for pivots?*

None that I know of.

R. E. Watkins.

I question its utility. I know of no objection for pivots.

W. D. Tickner.

I think appearance will be against it. For pivots I would be afraid of melting it when soldering the crown to the post.

Richard Kessel.

No objection if it is a German silver plate. If the patient has bargained for gold, don't use anything else.

L. P. Haskell.

From experience in using German silver in rubber repairing, I think there can be no objection to its use for the purposes mentioned.

A. A. Hazeltine.

It makes a good backing if covered with rubber. It would be only a little superior to brass if left exposed. Would hesitate to use it for pivots.

Dr. F. B. Rees.

Question 123. *A gentleman, 58 years of age, with the alveola process between the right upper second and third molars absorbed. I diagnosed the case as necrosis of the septum, and scraped till I felt live bone. Treated it from one to three times a week since with various remedies recommended for such cases. Have observed no pus, and there has been no pain or soreness, except three or four times during treatment. The case has been on hand six months, and I notice little, if any, restoration of tissue. Can any one tell me how to treat such cases from beginning to end?*

I know of no way to restore, entirely, lost tissue; nature alone can do that, but we might lighten nature's work, and save tissue remaining by not allowing it to slough off.

J. F. Johnston, D.D.S.

Try a saturated alcoholic solution of trichlor. acetic acid on a nerve broach wrapped with cotton. Touch the alveola around and between teeth, and if it does not improve the condition extract the third molar.

Richard Kessel.

Remove all necrosed bone; treat with sulfuric acid, then with tr. iodine, carbolic acid, and glycerin, equal parts. If first part of treatment is thorough, and there is no constitutional hindrance, the case will surely get well.

R. E. Watkins.

The age of patient considered you have no easy case. I am under the impression you have left little particles of necrosed bone. If you have scraped down to healthy bone, as you say, by cauterizing with nitrate of silver, and keeping it perfectly clean, I can see no reason why granulation should not start up and the parts be restored, or partially so.

Dr. F. B. Rees.

Question 124. *What objection is there to an aluminum plate? Is it not equal to gold for wear?*

No especial objection. I do not consider it as good as gold.

L. P. Haskell.

Time alone can answer positively, still I see no reason for considering it less durable than gold.

W. D. Tickner.

Aluminum has not the elasticity that gold has; does not look as well, and very often will edge, then can not be soldered. Have heard patients complain of a salty taste from it.

Richard Kessel.

There is no objection to aluminum for plates, and I think it will wear as long as gold. I do not see how it can wear out, but the rubber attachments may allow teeth to loosen as from a rubber base.

J. F. Johnston, D.D.S.

Have had no experience with it in plates, but I understand it disintegrates in wearing. It seems that for some reason, notwithstanding the advantages claimed, it has not come into use to any extent.

A. A. Hazeltine.

One of our advertising dentists says: The acids of the mouth will dissolve aluminum. If that was the case the mouth itself would be dissolved by the acids, but gold is, by all odds, the metal for constructing an artificial denture.

Dr. F. B. Rees.

Question 125. *How is the Cleveland vacuum cavity formed in plate?*

ANSWER. First make copper model of size and shape of cavity, and as thick as depth of the cavity desired; form over this copper model a cap of gold, with a flange, by swaging it between dies, when temporarily attached to die by wax, with copper model under it resting on die at location of vacuum cavity; make edges smooth and slightly beveled, the edges of cap extending in form of a flange, one-sixteenth of an inch wide, beyond copper model; an opening is cut in plate at location of vacuum cavity, as large as the copper model, and the cap soldered over it by means of the flange which overlaps the opening in plate.

Question 126. *What is claimed for the Cleveland vacuum cavity?*

ANSWER. That the edges can be made to fit roof of mouth accurately; that even in soft mouths the mucous membrane never fills up the cavity, as there is always space left around the chamber; that no irritation of membrane occurs if all edges are rounded and not left sharp.

Question 127. *Is it ever necessary to cut out V-shaped pieces of plate and afterwards solder edges in swaging outer rim over ridge?*

ANSWER. No, if the plate is slowly and carefully worked over the ridge.

Question 128. *How should the swaged plate be finished?*

ANSWER. Trim edges according to outline; bevel and burnish edges, and place plate in acid bath to remove marks of fire.

Question 129. *How may an accurate adaptation to die be determined?*

ANSWER. Pressure on front of ridge and on back edge of plate, and around top of ridge with fingers should not cause any motion of plate on die

Question 130. *How may slight inaccuracies of fit be remedied?*

ANSWER. Locate point in fault, and place several thicknesses of soft paper over point where plate binds, and again swage by light, solid blows.

The following questions and answers cover the same ground :

Question 131. *Describe the process of swaging a full upper plate?*

ANSWER. Anneal the plate by heating to a red heat, and put in sulfuric acid to clean the oxidized surface ; oil the dies to prevent, as far as possible, the die-metal adhering to the plate ; if any should adhere, be sure to wipe it off. Place the plate on the die, and with the horn-mallet (not too pointed) shape to the palatal surface. In order to save time, cut the anterior edge to top of ridge and mallet over the outer border ; place in the counter-die and strike one blow on the die, and see if the plate is in right position. If there is any tendency to buckling of the margins, especially over the tuberosities, mallet to prevent a fold. Repeat the swaging and examination till all tendency to buckling has disappeared. Anneal the second time and finish swaging by solid blows on center of die, till slight impression of plate is seen on center of counter-die. Then solder the lap in front, cutting none out, by placing the solder on the *inside*, having forced some borax between, and applying the heat on the outside, so as to draw the solder through. This process also strengthens the plate in its weakest point. While hot drop into the acid.

Question 132. *Is there danger of over-swaging?*

ANSWER. Yes, if pure lead is used.

Question 133. *If one desires an "air-chamber," how should it be made?*

ANSWER. By placing one of sheet lead, or of sheet wax on the plaster model.

Question 134. *Is the so-called Cleveland chamber of any advantage?*

ANSWER. None whatever ; on the other hand there are very serious objections to them.

Question 135. *Is it necessary, or of any avail, to boil the plate in sulfuric acid to remove die-metal from its surface?*

ANSWER. No. If the plate is bright any traces can be seen and wiped off. The acid will not remove it ; as evidence of this a lead acid dish may be used for many years for boiling sulfuric acid, and the acid has apparently no effect on it.

Question 136. *How should a full plate be shaped on its outer margin?*

ANSWER. Should *always* be made highest over the cuspids, and the gum be made fullest over them, so as to restore the contour of the lip.

Question 137. *What should be the test of an accurate fit?*

ANSWER. Perfect adaptation to the model, with no tilting, provided Babbitt metal dies are used.

Ohio Journal.

EDITORIAL.

HAVE FAITH.

Nothing can prosper without faith. For life to be happy, prosperous or useful faith must be woven and interwoven into everything we do. Without it the spirits droop, the mind relaxes, and the muscles lose their tension. With it we can endure almost anything, enjoy almost anything, accomplish almost anything.

Faith smiles at impossibilities, and says *it shall be done*. It lights up every faculty with cheer, it inspires every thought with power, and sets on fire the whole man. It transforms a weak man into a strong man, a slow man into a quick man, and a dull man into a sharp man.

Faith gives firmness to the tread, power to the will and nerve to the hand. And then weaving a threefold cord of courage, zeal and intelligence, binds every lion in our path, whips the devil, and walks triumphantly on to success.

A man that has no faith in himself will not succeed. This is the reason most successful men have much self-esteem. They think more of themselves than of anyone else; think more of themselves, perhaps, than anyone else thinks of them; perhaps more than they ought to think of themselves. They are too ignorant to see their weakness. Happy souls! They go on blundering and stumbling, and yet planning and working, just as though they were somebody; and they act and live and aspire right in the face of the ridicule and the laughter and the assurance of those about them, who say they are fools! So they go on, believing in themselves though defeated time and again. They do not seem to know when they are whipped and defeated and downtrodden. They have such faith in themselves they finally blunder and stumble into a good thing, and cling to it with such tenacity that they succeed.

But without faith in ourselves we shall surely be a nonentity. No man will struggle to be what he does not believe he can become. It may be an overestimate, but the secret of this is the faith of an unconscious self esteem that holds its head so high it looks over

the present environment and sees what is to be ; whereas the physical eye sees only what is. This enchanting view of the future gives elasticity to the tread, hope to the spirits and a halo to the sky. It adds what is to be to what is, and makes us proud.

Then don't laugh when your weak, slow, dull man all at once straightens up quite on tip-toe and appears to walk on stilts. Faith is pouring into his whole nature a power that is sharpening his wits, quickening his spirits and strengthening his muscles.

Of what use are we in any business in which we lack faith? It must be our home, the concentration of our energies, the center of our trust, the object of our warmest affection. Our business must be so much a part of ourselves we cannot live outside of it, can not rest without it, cannot find so soft a pillow as on its bosom. Such a man has faith in himself and in what he does.

LIKE CLAY IN THE HANDS OF THE POTTER.

The potter does not put his clay on the wheel till he has refined and tempered and toughened it. Comparing ourselves to the clay, we may not know why we are splashed about in the water till we are "all gone to pieces," and then forced through torturing seives and shoots, till we have lost all our pretty pebbles, and left a quivering bed of mud ; and still left there till it takes cutting and spading and tramping and turning and overturning to make us pliable and well tempered. And, as we are taken from that trough, we are knocked about and slapped with great iron spades, and piled and piled again, ground and tortured, and subjected to all manner of indignities and insults, that we may lie plastic in the hands of the potter. We have lost much—we are not half as big as when we were first taken in hand—but if all the potter wants is left, and if all this preparation was necessary, the process has not been too severe. Let us patiently and manfully endure all that we may be prepared for honorable use.

Then is this only preparation? Yes ; and even such preparation is useless unless the potter wheels us on his wheel till we should fly into a dozen pieces if he did not hold us on ; and there

he pats us and slaps us and turns us and works us into erect position, and gradually tickles us into form and comeliness.

But even this does not bring character. When he cuts us from his wheel we are homely and lusterless till he daubs us with paint and polish. And we do not then shine. To bring out our true worth we must be put into the fiery furnace.

If it could speak, how this plastic clay would complain as it is forced through all these processes of refining and firing. But if it could foresee the finished vessel, the result would be too satisfactory to allow regret.

Few of us would be willing to be half made by having the work half done. Yet we complain during the process if we are subjected to thorough treatment. We are almost as stupid as the clay, and not half so placid in the hands of discipline.

Wouldn't we have "a good time" basking in the sunshine if we had our way? No potter should lay his ruthless hands on us, nor take from us our precious pebbles that we have so long hugged as our idols. If we had our choice, few of us would be willing to be put in the cold dreary tread mill of life and ground down to the homely use of every day duties. We think less of use than pleasure, and care less for future responsibilities than for the allurements of the present. "Let me alone," we cry; and instead of being "as clay in the hands of the potter," we shrink from the rigor of life's preparation.

RIGHT WILLING FOR SUCCESS.

"Where there is a will there is a way," is often quoted with little comprehension of its meaning. What we should mean by it, and the only meaning giving it value, is: Where the whole life force is thrown into a course we may look for success.

The willing of most of us is a puny, sickly, inconsistent thing. Even at that, it is more abused than used. Willing for success with the feet thrown over a chair and the whole head dreaming, is not the willing we mean. Willing while making a chimney of the nose by burning narcotic weeds in the mouth is poor willing. While such a stick burns at one end it generally has a fool at the

other. Willing for success while fooling away life with any folly is not a consistent willing; it is rather courting the folly you are fooling with. It may be a present pleasure, but when you are married to it your Delila will make you a slave. Shake yourself of your voluptuous slumber, and break the Philistian cords which already bind you, before your strength is taken away, your eyes put out, and you find yourself cringing in your captor's prison.

Right willing for success means even more than this. It is more than breaking away from follies. It stands out conspicuously for something distinctively worthy of life. It arouses the whole energies of the man. It is an inspiration that sets on fire the soul, and makes of us an engine of power.

A young dentist entering on his practice cannot fold his hands and set down quietly for patronage. The time was, perhaps, when his titles and the dignity of his profession would give him position and importance; but now, as the price of recognition, the people demand aggressive activity. They want to see the man of pluck and enthusiasm, wedging his way into the crowd by dint of his wits. They want to see him in society, hear the ring of his intelligence, and have a proof of his ability. Even professional men now, as well as artisans, mechanics and skilled laborers, must be first on exhibition and probation. Before a young dentist can expect more than passing attention, he must demonstrate his necessity to be, to do, and to suffer, and if he has not the pluck for this trinity of preparation and usefulness, he will fall out in the race of life. The ostentation of the knight-errant, the tinkling symbols of nobility, the inherited importance of caste, are nothing now. Neither, nor all, will now serve to hoist himself by his own boot straps. As a young man enters a community the question is not, Whence came he? What are his titles? What his assumptions? But, What can he do? How will he enrich the community? Have we room for him in the busy market? And all this he must himself demonstrate, or die. This is the reason so many die professionally. They have an idea dentistry is a royal road to luxury. There is no royal road to luxury.

NOTES.

To obtain a smooth surface of a model, heat it and then dip it hot in melted paraffine.

* * *

Dr. Haynes uses nitrate of silver like a lead pencil, as it comes in sticks. He finds it valuable in the worn down teeth of old people.

* * *

Anthropologists tell us that 200,000 years is not too long to be required for the modification of the dental structures, so far as structure and number are concerned.

* * *

The first colored woman in the United States to fit herself for practicing dentistry is Miss Martha Jordan, of Dallas, Texas. She is studying her profession at Denver University.

* * *

Dr. McDonald objects to the use of mastic varnish in cavities. Carbolic acid will coagulate the contents of the tubuli without the use of mastic. Also, he would not combine cohesive and non-cohesive gold in the same filling. He found that they broke apart every time.

* * *

Dr. C. Newlin Peirce states that absorption of the alveolar ridge is not uniform with civilized races. The tooth sockets are frequently filled up, making a ridge, which persists during life. About one-fourth of those losing teeth exhibit this evidence of hypermetrition of the mandibular arch. Where the molars are lost the chin is thrown down and the angle increased.

* * *

Dr. W. G. Browne says the curative action of nitrate of silver in the teeth of children is admirable. The little tots are so small that it is almost impossible to prepare cavities for fillings in their teeth. In these cases nitrate of silver acts most satisfactorily in arresting caries.

* * *

Dr. R. A. Holliday says a very satisfactory way of applying nitrate of silver is to soak blotting paper in a solution, and when dry cut it in small pieces suitable for placing in the tooth. It is easy to handle, and does not get in the mouth.

Well, the World's Fair Dental Congress has come and gone, and no doubt we may pronounce it a success. The very rubbing together of so many eminent dentists from all parts of civilization will promote advancement. Probably all have learned something, and most have learned much. The extensive publication of the proceedings, which is sure to follow, will also benefit the masses.

* * *

Our subscribers' list has become so large it takes much time to revise it for the new year. We therefore prefer giving new subscribers the December number of the *ITEMS* if they will subscribe for next year before the 15th of December. If this number, therefore, reaches any one who is not now taking it, we should be pleased to receive his subscription as soon as it is convenient to send it.

* * *

There are now thirty dental colleges or dental departments of colleges recognized by the National Association of Dental Examiners. The number of students in these colleges last session was: Freshmen, 1,429; juniors, 927; seniors, 433; graduates, 320; post-graduates, 44. The attendance of unrecognized schools was: Freshmen, 111; juniors, 54; seniors, 22; graduates, 20.

Twenty-six colleges were represented by delegates at the last session of the National Association of Dental Faculties.

* * *

Dr. McDonald takes strong exception to Dr. Brewer's method of filling root canals with cotton, creasote and oxid of zinc. He had had occasion to remove a number of cotton root canal fillings, and had always found it a terrible mess, unless the apical foramen had been thoroughly closed with something else. He would use either all gold or gold at the apex followed by gutta-percha. He would not cap gutta-percha fillings in deciduous teeth with amalgam, as he thinks the gutta-percha alone will last as long as the teeth are needed.

* * *

Much of the artificial appearance of artificial teeth can be avoided by making them a little irregular and careless looking. Few natural teeth look as regular and precise and stiff as we make an artificial set. And they should not be very small and pretty,

and "pearly white." Make them look natural; and nearly every thing in nature is irregular in its harmony. In learning landscape drawing when a boy, we were continually measuring with a rule and seeing how precise we could make every line. Our teacher would come along and "spoil" our studied effort by taking our pencil and dashing here and there with all manner of crooked and waving strokes and dots, fairly covering up our straight lines with irregularity everywhere. And he didn't seem to spoil our picture.

* * *

Some people have only an indefinite, hazy notion of anything and because they have no clear, positive, well-defined views and plans they are a failure, though they know something of many things. Such people seldom have social influence, a distinct sphere or an honorable accumulation. They are too negative to be aggressive, too vacillating to be positive, and too fearful to be established in anything they undertake. A successful man stands out distinctly for something, though it may be but one valuable idea. He may not be smarter than the other, he may be inferior in most things, but in one thing he is distinctively superior, and this is because he has so concentrated his knowledge and skill on it as to be master of it. He may have prominent weaknesses, flagrant faults, and foolish eccentricities, but he has one strong point that wins for him confidence, patronage, and success.

* * *

Dr. Andrews, Chairman of Section 1 of the Dental Congress, read an address of welcome in which he greeted in the most fraternal spirit those present from every nation. Said he: Dentistry belongs to no one nation; it belongs to the whole world. and we invite with sincere acceptance the competition of professional thought from every quarter. We greet you, gentlemen, with true American hospitality, and bespeak for you from each of the representatives of our National and State organizations the cordial welcome of a friend. In my judgment, dentistry should not be one of the fugitive and obscure callings, irresponsible and independent; it should seek to fill an honorable place in the ranks of the great medical fraternity, where I believe it justly belongs. Our place is, and ought to be, among the specialties of the great guild of physicians. The oculist, the aurist, and the dentist should stand side by side, part of the great body of scientific workers who heal the sick. Our histological and pathological literature, our

mechanical inventions, our ever-increasing discoveries with chemistry and the microscope, all show with what far-seeing study and native originality our students apply themselves and claim their places among the scientific explorers and molders of scientific thought.

* * *

The twenty-ninth annual meeting of the Missouri State Dental Association was held at Excelsior Springs, Mo., July 11th, 12th, 13th and 14th. The following officers were elected for the ensuing year: President, Dr. W. E. Tucker, Springfield; First Vice-President, Dr. J. T. Fry, Moberly; Second Vice-President, Dr. Chas. L. Hungerford, Kansas City; Corresponding Secretary, Dr. Wm. Conrad, St. Louis; Recording Secretary, Dr. S. C. A. Rubey, Clinton; Treasurer, Dr. Jas. A. Price, Weston. Committee on Ethics, Dr. Frank Slater, Rich Hill; Dr. W. N. Morrison, St. Louis; Dr. C. L. Hungerford, Kansas City. Board of Censors, Dr. E. E. Shattuck, Kansas City; Dr. H. A. Cress, Warrensburg; Dr. E. B. Crane, California. Committee on Law, Dr. Jas. A. Price, Weston. Committee on New Appliances, Dr. J. G. Harper, St. Louis.

Wm. Conrad, Cor. Sec'y, St. Louis, Mo.

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The officers of the Georgia Society are as follows:

Dr. N. A. Williams, Valdosta, President; Dr. W. W. Hill, Washington, First Vice-President; Dr. C. N. Rosser, Atlanta, Second Vice-President; Dr. S. H. McKee, Americus, Recording Secretary; Dr. O. H. McDonald, Corresponding Secretary; Dr. H. A. Lawrence, Treasurer.

Drs. Atkinson, Bonton, Johnson, Coyle and Catching are elected on the next Board of Dental Examiners, the Board being elected by the Society every two years. Drs. Jewell, Hopps, Haynes, Simmons and Barfield are elected as the Executive Committee.

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Notwithstanding the fact that ITEMS OF INTEREST has achieved phenomenal success during 1893 as a truly representative dental magazine, it is the intention of the management, by raising the standard of contributions and introducing new departments, to keep ITEMS OF INTEREST in the front rank of dental journalism during 1894.

FOR OUR PATIENTS.

TO A FRIEND SUFFERING FROM A TOOTHACHE.

Beside the terror of the dentist's art, there is no hope ;
Cheat not thy timid heart, there is no cure ;
Though earth and main were searched for nostrums,
'Tis alas in vain you apply the camphor to your face.
In vain with cotton crowd the hollow space,
In vain the tear, the sigh, the hollow moan,
The sweating potions and the heated stone.
In vain you waste your joy, your health, your ease
To quell this pain that never more will cease,
Till lost in hope, the wretch consents to feel the jerk
Tremendous from the tempered steel.
Think not to-morrow will uncloud your eye,
Trust not to-morrow for a brighter sky,
Hope not to-morrow you may smile again,
Trust not to-morrow for receding pain ;
But learn, if yet thou has't to learn this truth—
There is no Sabbath to the aching tooth.
Nay, start not, friend, nor quake with terror more,
I passed the anguish in the cure before.
Long days and nights I bore the ceaseless pain
And wept inglorious o'er the hated pain,
Whil'st nature smiled, my head, my heart were sad,
And all around me but myself were glad.
Fool that I was thus tamely to endure,
Day after day what nature could not cure !
At last, when patience died and hope had flown
I sought the dentist in his gloomy room,
But when his awful talons met my sight
My soul recoiled with horror and affright.
With nameless pang I took the dreaded floor—
A jerk, a shriek ! and all was o'er.
Go, suffering friend, and seek this last relief,
Though keen its pang its tenor is but brief.
Thy nerve brace firmly like the moveless rock,
Thy heart prepare to bear the parting shock.
Let no soft words nor patience dull delay
Or unnerve thy soul, or tempt thy feet astray.
With fruitless sorrow mourn not nature's law,
But spurn the rebel from thy aching jaw.

“ I will soon be through,” said the dentist.

“ Yes,” replied the tortured patient, “ I should think you would, and the distance cannot be great.”

"BOIL IT DOWN."

Editorial in Ohio Journal.

At a recent meeting of the Chicago Dental Society, the essayist made an apology for the brevity of his paper. In the discussion another member said—"Brevity is the very last thing that I would think of making an apology for. I believe the man who uses the fewest words usually advances the most ideas, and I regard the present paper as no exception." An idea worthy the attention of most writers.

A little more care taken in discarding superfluous words would make many papers more valuable. Papers are often tiresome to listen to, although they may contain many new and valuable suggestions; tiresome because they are overburdened with language that could have been profitably eliminated without affecting the article. We do not mean that anyone should restrict ideas. Present as many as desired, but "weed out" superfluous words.

The ten-minute paper has recently become a marked feature of the New York Academy of Medicine. The result, says the *N. Y. Med. Journal*, has been a marked increase in the attendance at the meetings, a large number of concise, pithy and interesting papers, and a wide publication of the proceedings. The instructions to writers of papers formulated by the chairman, Dr. Northrup, contained a number of apt suggestions and were somewhat as follows:

1st. Hippocrates and Galen may be passed with very slight notice, as they have been for some time dead and their opinions are somewhat obsolete.

2d. Scratch out the formal introduction and begin where the subject-matter really begins.

3d. Condense the body of the paper.

4th. End the paper where the subject-matter ends, making its action like that of the piston syringe—begin, spatter, stop. As a result of this policy the papers have been unusually practical and to the point.

This applies with equal force to the dental profession, and should no societies adopt this rule, we hope our readers will bear it in mind when preparing society papers. We feel sure that the effort will be appreciated.

The *San Francisco Chronicle* says a man there who had been suffering from his teeth, had *thirty-six* extracted at one time. No wonder he was taken to the hospital.

The following terse poem, by Dr. W. E. Ward, appeared in a recent issue of the *Jour. of Amer. Med. Association*:

"Just a word to those good doctors,
Who are meditating deep,
On a paper they're preparing,
Full of thoughts too good to keep—
Boil it down.

"'Tis not words, but facts we're wanting;
Therefore prune and pare with pains
Your scholastic evolution
Till an essence pure remains—
Boil it down.

"Welcome every fresh advancement,
Hail, each new discovered fact,
But in writing a description
That attention will attract—
Boil it down.

"And remember that discussions
Are of interest all agree;
So your paper should invite it;
Make it short as well may be—
Boil it down."

EQUAL TO THE OCCASION.

A dentist now practicing in Western Washington tells us how he succeeded in serving one of his former patients in Illinois. An old German had brought his wife in several times to have an upper set of teeth made, but there remained a solitary molar that wagged and rolled about in the old lady's jaw which she steadily refused to have removed. This performance had been kept up about a year, when on her last visit to induce the dentist to construct the denture without removing the offending molar, he decided to resort to diplomatic methods and ostensibly consented to take the impression, which he proceeded to do with plaster, making it a point to have the tooth well imbedded in the plaster. When the plaster was firmly set he removed the plaster, tooth and all from the mouth of the astonished lady.

Pacific Journal.

NOTICES.

A NEW ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND COLLATERAL SCIENCES.—Dr. George M. Gould, already well-known as the editor of two small medical dictionaries, has now about ready an unabridged, exhaustive work of the same class, on which he and a corps of able assistants have been uninterruptedly engaged for several years.

The feature that will attract immediate attention is the large number of fine illustrations that have been included, many of which—as, for instance, the series of over fifty of the bacteria—have been drawn and engraved especially for the work. Every scientific-minded physician will also be glad to have defined several thousand commonly used terms in biology, chemistry, etc.

The chief point, however, on which the editor relies for the success of his book is the unique epitomization of old and new knowledge. It contains a far larger number of words than any other one-volume medical lexicon. It is a new book, not a revision of the older volume. The pronunciation, etymology, definition, illustration, and logical groupings of each word are given. There has never been such a gathering of new words from the living literature of the day. It is especially rich in tabular matter, a method of presentation that focuses, as it were, a whole subject so as to be understood at a glance.

The latest method of spelling some terms, as adopted by various scientific bodies and authorities, have all been included, as well as those words classed as obsolete by some editors, but still used largely in the literature of to-day, and the omission of which in any work aiming to be complete would make it unreliable as an exhaustive work of reference.

The publishers announce that, notwithstanding the large outlay necessary to its production on such an elaborate plan, the price will be no higher than that of the usual medical text-book.

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LETTERS FROM A MOTHER TO A MOTHER ON THE CARE OF CHILDREN'S TEETH. By "Mrs. M. W. J." Fourth edition. The Wilmington Dental M'f'g Co., Publishers. Price, 25 cents.

The success with which this valuable little treatise has met is extremely gratifying to the publishers. It has received the unanimous approval of the profession; and considering the wealth of information it contains, no household should be without a copy.